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CONTENTS

In one of our feature stories this issue, one of the founders of AST Research voices the realistic, though seldom-voiced, notion that it's usually fatal to an enterprise if the founders think they know everything.

We at *MicroTimes* are quite sure we don't know everything, and we welcome any suggestions, comments, and criticisms that you, our readers, want to bring to our attention. We'll even print them, complimentary or not. In return, however, we ask a couple of things. Please sign your letters with your real name, since we will not print anonymous or obviously pseudonymous letters. Also, please include your address or phone number if you'd like a reply.

Please direct your correspondence to *MicroTimes,* 5951 Canning Street, Oakland, CA 94609.

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SmoothTalker: The Latest Word On Speech Synthesis *by Ken Goehner* **20**
Now, thanks to this new software, your Macintosh can talk. User friendliness takes on a new dimension.

The People Behind "The Print Shop" *by Ken Goehner* **30**
The creators of the bestselling graphics program speak their minds on the artistic revolution and intergalactic marketing.

AST Research: Designed For Success —And People *by John D. Gresham* **44**
Irvine-based AST has both a successful product line and possibly the world's happiest employees. As one of their founders explains, they planned it that way.

Unix In The Real World *by Carter George* **54**
The Unix operating system has been accused of being useful only in the ivory tower. As *MicroTimes* discovered, it isn't necessarily so.

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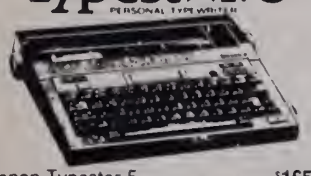

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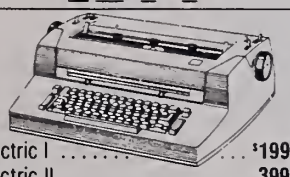

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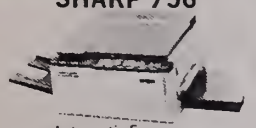

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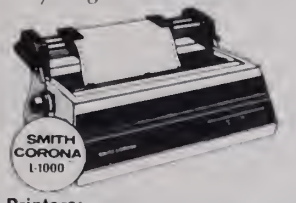

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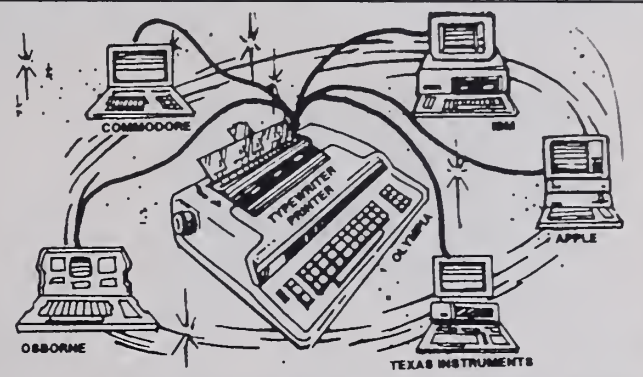

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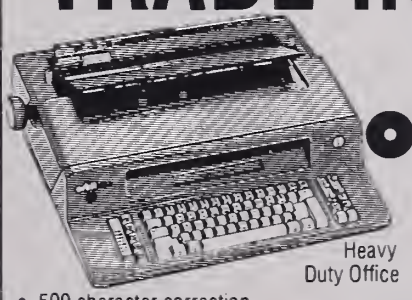

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Kaypro Introduces AT-Compatible Computer

Kaypro introduces a new AT compatible computer, the 206i, without 20m drive. The name of the computer sounds like a new BMW model, which may be a ploy to draw in the "yuppies." The price is the same as the IBM-AT but you get more. Kaypro does not, however, include a monitor with their system.

Better Memory On The Way

Video drives are currently available that can write once and read as often as needed. The odds are very high that read and write systems will be available within two years. Devices of this nature are going to continue to blur the distinction between mainframe, mini, and the PC.

Apple Takes Vacation, Continues Mac Loan Program

Apple shut down four of its manufacturing plants temporarily during March. Rumor has it that the "vacation" was due to high inventory and overstocked shelves. It would appear that Apple expected a better fourth quarter last year than they actually had.

Still, all is not lost. Apple's Macintosh loan program has proved so successful that it's being continued indefinitely.

Software Comes To 7-Eleven

Mastertronic is now selling its $9.95 game software in 7-Eleven stores throughout California. The games in general are fun for children, and the price is certainly right. How can you lose at this price? Let's hope this starts a trend for simpler games, aimed at the younger market.

Relive WWII With *Carriers At War*

Carriers At War is a breakthrough piece of software. It stands out from its combat-simulation predecessors because it does the things that a computer should in a complicated strategy game. Most strategy games require 5 to 20 hours playing time, often because the player must worry about every little detail, much like moving things around a large spreadsheet.

CAW is a naval game simulating famous battles from WWII in the Pacific. The first scenario is the attack on Pearl Harbor, which, from start to finish, required approximately 45 minutes of my time. That time included walking through a tutorial and executing the actual battle. After you order the arming of all your aircraft you simply wait a few minutes. Look at the decks, and you find that the aircraft are beginning to arm themselves. Most games would have required you to move each aircraft from one position to another, which means far too much record-keeping for all but the dedicated strategy gamer.

CAW is an 80K machine language program. The game moves so fast that it is hard to believe that the computer performs such a large task in so small an amount of time.

The game can be played as either side. Not only can you play from either side, but you and a friend can play on the same side against the computer. All of us who have tried to introduce a new player to a game like this will appreciate the advantage of having a novice player next to you on the same side rather than against you or facing the computer all by himself with little or no help from you.

The Pros And Cons Of Mail Order

IBM, in an attempt to destroy the gray market, has closed some computer stores for selling to mail order houses. A continuing effort is being made by many of the best-known hardware and software companies to stop price competition for their products. In some cases this is an attempt to prevent sales without support, since many mail order houses will not or cannot support the hardware they sell.

Many of us have purchased from a mail order house because of the large potential savings. Some more technical users don't need the help of the local "computer store salesman," who quite often is no more qualified than the user. On the other hand, users who are not familiar with setting up new hardware or configuring software should do business with a computer store. With a computer store at least there is someone on the other end of the phone that you may question.

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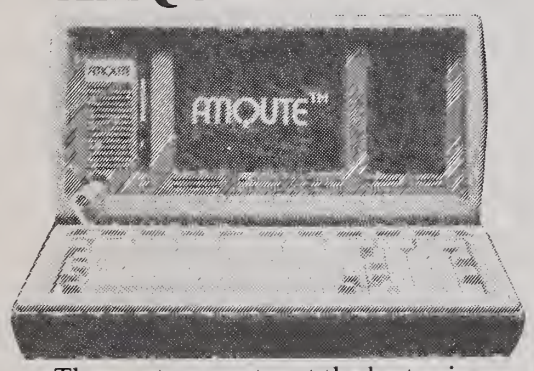

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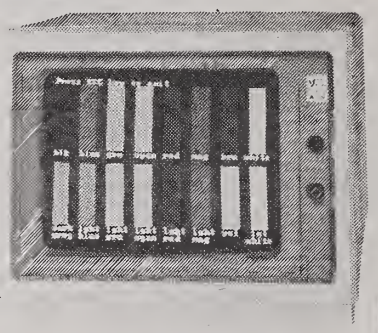

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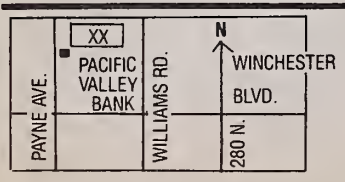

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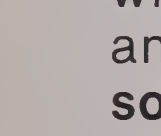

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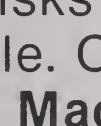

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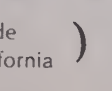

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ComputerLand Offers Hands-On Training

True computer literacy is often gained only one way — hands on. When you try to do something with a piece of software or hardware and it doesn't work, you resort to reading the book. Not too efficient, perhaps, but you learn a lot about the system's capabilities that way. If you don't have time, or you don't want to pay for your employees to spend the time, training classes can be a help.

Typically the novice user in a class only gets an *idea* of what a program or computer can do for him. Just finding out the basics—where the keys are located, what they do, and one quick pass through the system—can take up to 8 hours. Experienced users, on the other hand, can learn much quicker and require much less class time. Experienced users will learn much faster with the book and a real-life problem. What they need is a support phone line that they can access when they need help.

With so many new computer users buying computers for business, there is a growing need for both kinds of support. ComputerLand is one of many stores which are beginning to offer training in a separate and independent training facility. ComputerLand thinks a large number of franchisees will open Learning Centers this year, partially because of the low entry cost. They also expect that as much as 20% of store business could come from the Learning Centers.

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TRS Introduces Tandy 6000

Tandy has upgraded its TRS Model 16B, a Xenix multiuser system; the upgrade, for the most part, seems to be a name change from Radio Shack to Tandy. The computer has been around for a long time and is used in many business applications. The 6000 uses a 16 bit microprocessor with 512K, expandable to 1 Mbyte with two 8-inch floppy drives. It now also runs twice as fast. The unit is also available with a 15Mbyte hard disk. The Tandy 6000, with a hard disk, two DT-100 terminals, Tandy Profile 16, a data base software program and a DMP-2100P dot-matrix "letter-quality" printer, currently sells for $9400.

Compaq Pioneers Shared Office Workstations

Compaq is moving into the office much faster than would have been predicted early last year when the talk went something like, "O.K., they had a great year one, but how long can they survive, grabbing at IBM's market?" Well, the answer is, they are doing quite well, thank you!

The folks at Compaq have a lot of savvy. They saw something that others did not: while the "personal work station" is the goal of most companies interested in office automation today, it's also very expensive when not everyone needs a computer 100% of the time. A Compaq allows two or more people to share a computer. It's like checking out a book at the library.

Computer fans might say that this notion cuts out some computer sales you might attain if everyone had his own. Wrong, I say. If the people who buy computers today are happy, they will buy faster after the pump has been primed. True, if you have too few computers, you have contention problems and the user is unhappy, but if you have too many, management will see idle computers and be outraged. Compaq's shared-station system offers an effective and popular solution.

WordStar Removes Copy Protection

Copy protection has been removed from *WordStar 2000*, and installation is much easier with the protection removed. It will now run on more of the compatible machines. I think this is important, because *WordStar* was the kind of program the average person found too complicated, but the technical computer users loved it. And besides, it's now more accessible to people with partial-compatibles. Good move, MicroPro! Phone (415) 499-4027 if you have questions.

HP Introduces New Portable

The new HP portable computer has everything. ThinkJet printer, keyboard, monitor, mass storage, and a mouse. The system runs a modified Unix System III, HP-UX, a multi-tasking, windows system.

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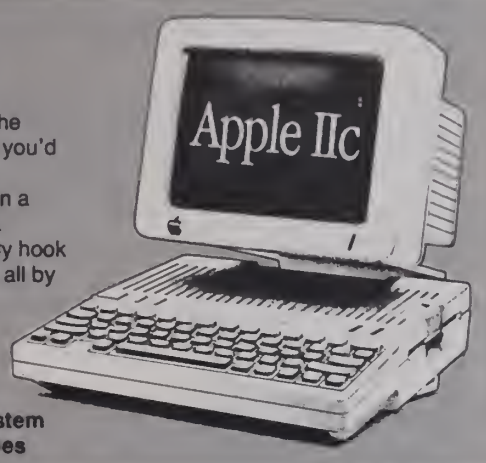

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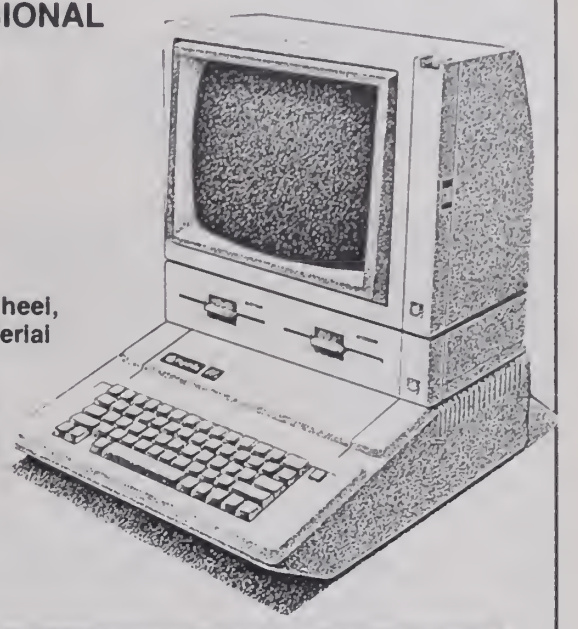

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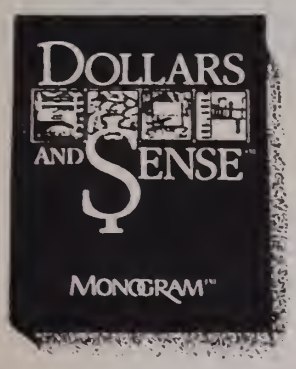

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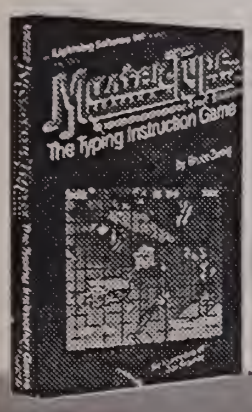

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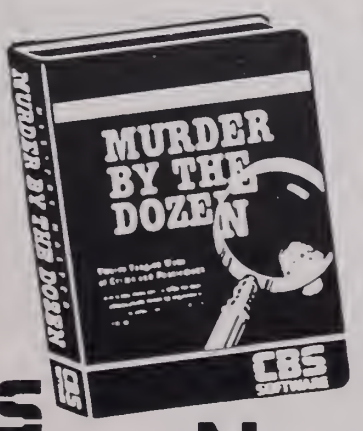

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sided disk drive with a capacity of 710K bytes per disk. The system has an amber display with square pixels and an adjustable tilt.

The whole system weighs 25 pounds and takes up less than one square foot of desk space. The price is $4,995 and includes the HP-UX operating system, *HP Windows* and *Personal Application Manager*. For more information contact Hewlett Packard in Cupertino.

IBM Keeps Micropolus 50MB Drives For The AT

IBM appears to have bought enough 50 MB drives to outfit their AT production until they switch to 80 MB drives. The drives in question are the Micropolus "Voice Coil technology" 50 Megabyte drives. The advantage of the "Voice Coil technology" is that you don't crash your hard drive when you lose power, as can happen with the Stepper Motor technology drives.

IN RECEIVING

Framework 1.1 By Ashton-Tate

Framework 1.1 has arrived! The differences listed are support of more computers, printers, and graphics boards. The big change for hard disk users is that *Framework 1.1* allows you to install your system on a hard disk and then uninstall, whether to change to another computer or for any other reason you might want, like reformatting. With the original system you had to have the original system disk with you whenever you booted up *Framework*. If you use a Compaq+, it meant that you had to carry a disk with you when you ported your computer about.

Also new from Ashton-Tate is *Framework: On-the-Job Applications*, a new book. The price is $19.95. *OJA* is a set of templates and training in the use of *Framework*. It was designed for the novice and will demonstrate budgets, interest rate calculation, basic statistics, and capital budget analysis. The Appendix contains the FRED code necessary to generate a menu-driven series of *Framework* programs. (Ashton-Tate, 10150 West Jefferson Boulevard, Culver City, California 90230, (213) 204-5570 Telex 664228).

SeekEasy By Correlation Systems

SeekEasy is a "flexible match" information-filing and retrieval program for MS-DOS. This newest version of the program allows you to sort other databases with the *SeekEasy* system. Examples of systems that CS says will work with the new program are *dBase II*, *dBase III*, *Wordstar*, *Perfect Filer*, and many others.

SeekEasy is a "friendly filer." When started, it simply asks the user to "type what you wish to find, then press ENTER." For example, to find all references to hard disks in a file of magazine article titles, the user just types "hard disks" (or even "disks, hard") and then presses ENTER. *SeekEasy* does the rest! For more information, contact Correlation Systems, 81 Rockinghorse Road, Rancho Palos Verdes, CA 90274, (213) 833-3462.

The Consultant (Formerly *Delphi's Oracle*)

The Consultant system for the Commodore 64 consists of the Consultant manual, a key, and a floppy disk containing a 40 and 80 column version of the master program. (The Key is a chip that must be connected before the system will run.) The system is manufactured by Batteries Included, 186 Queen St. West, Toronto, Canada M5V 1Z1, (415) 596-1419.

The Perfect Score: Computer Preparation For The SAT By Mindscape

This program runs on a single disk drive Apple II 48K system. It includes 6 double-sided disks. Also included are computerized, timed and scored practice exams, and a manual with complete test-taking strategies. The program is designed for anyone who is faced with taking the Scholastic Aptitude Test (SAT) in the not-too-distant future. There are 100 questions per diskette, and the test diskette is timed. You are allowed 30 minutes for each section.

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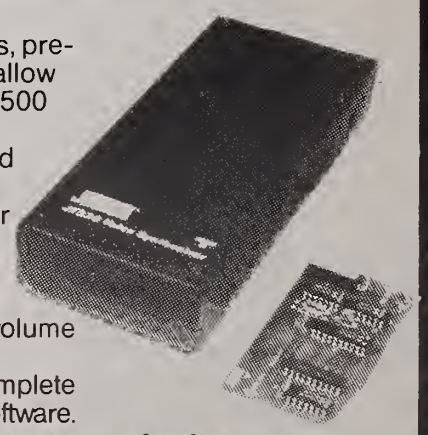

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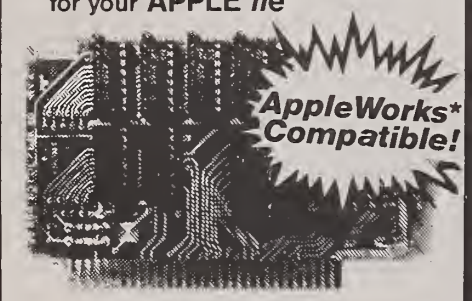
80-Column plus 64K RAM for your APPLE *IIe**



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Part No.	Description	Price
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KB-A68	68-Key Apple Keyboard only.	$ 79.95
EAEC-1	Expanded Apple Enclosure Case only.	$ 59.95

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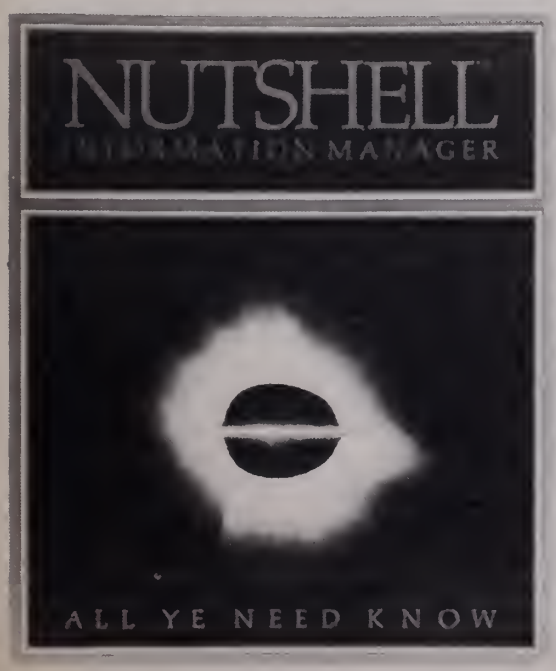
Also new from Mindscape are two Commodore 64 programs and three Apple II educational programs. *Keyboard Cadet*, a complete, self-paced typing course, and *Alert*, an Indiana Jones problem-solving game, are for Commodore. The three Apple products are *Mr. Pixel's Cartoon Kit*, *Think!Tonk!*, and *Bank Street StoryBook*. The Apple games are for children around 8 year of age and up.

For more information on these products or any other Mindscape programs contact Mindscape, Inc., 3444 Dundee Road, Northbrook, Illinois 60062.

Out Of The Inner Circle

Out of the Inner Circle is the title of a new Microsoft Press book by Bill Landreth, "The Cracker," (see *MicroTimes* November 1984 story). This book says it is *not* a guide to hacking. Richard Nixon said, "I am not a crook."

Estimates of losses from computer crime range from $100 million to more than $45 billion, according to Bill. Losses of that magnitude deserve our attention, and so does this book, which is published by Microsoft Press, a division of Microsoft Corporation, Bellevue, Washington 98009.



Nutshell By Leading Edge

Nutshell is a data base management program from Leading Edge. *Nutshell* handles as much text as you want and has full reformatting word wrap. It also has overstrike, insert and delete. *Nutshell* can exchange data with your word processing program, spread sheets and other programs that are in standard text file format. What this means to you is that you don't have to type in the data twice. (Leading Edge Products, Inc., 21 Highland Circle, Needham Heights, MA 02194, (617) 449-4655.

Inside 123 By Hayden News

This package is a complete self-study training package with ready-to-run templates for your business and professional needs. The book/software combination was developed by National Training Systems, Inc. and edited by Jay M. Sedlik, Ph.D. The program provides ready-to-run templates, and saves the micro user time by making him productive sooner. The program sells for $49.95, and is available from Hayden Book Company, 10 Mulholland Drive, Hasbrouck Heights, NJ 07604 (201) 393-6306.

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COMPUTER CEMETERY OPENS

The Chip of Ages Computer Cemetery in Mission Viejo opened this week to a storm of controversy and a brisk business. Owner Digby J. Watson told us that he got the idea for a computer cemetery when his VIC-20, Spot, died last year of massive microprocessor burn-out. "It seemed like such a shame to just throw old Spot into the Trash, I mean, garbage can . . .," Watson recalled. "We had spent so many happy hours together. So I dug a grave and buried the machine in the back yard. The family gathered around, and I said a few words about what that little computer had meant to us. Little Timmy played 'Taps' on his new synthesizer. Later we got the headstone carved in the shape of a disk drive. It was my wife's idea."

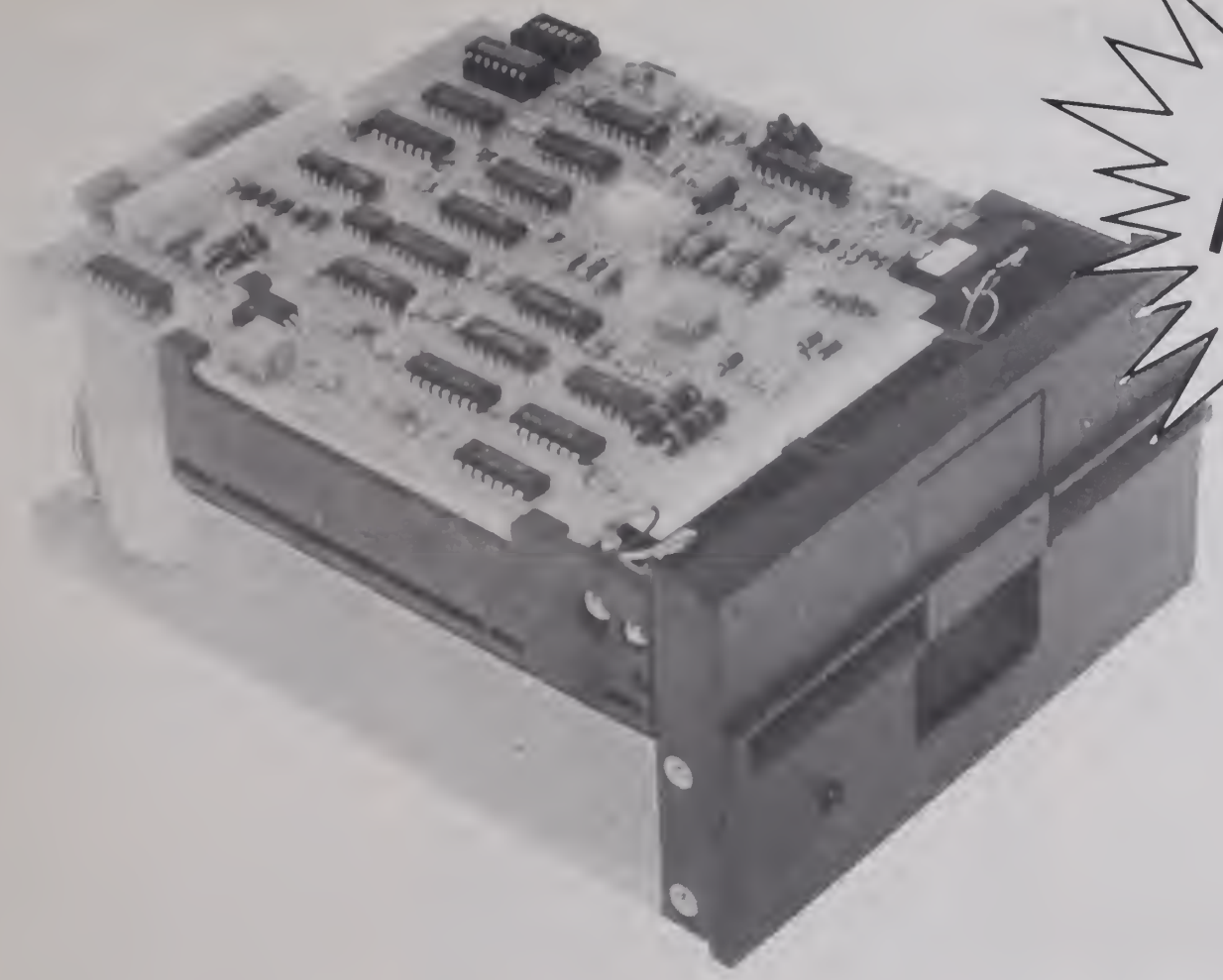
Bereaved owners can purchase plots at Chip of Ages from $39.95 on upward. Local air quality management standards prohibit cremation of deceased devices, but caskets, based on the manufacturer's original shipping container specifications, are available for most popular systems, at a nominal charge.

Father Sean Mulcahey, of nearby St. Ada's Parish Church, denounced the idea of a computer cemetery in a sermon last Sunday: "A personal computer has no immortal soul! It cannot sin, and it cannot be Saved! To render a machine the last rites appropriate to a human being is monstrous and blasphemous!" Rabbi Eliezer Kobol of the neighboring PASCAL Lamb Synagogue expressed a different opinion: "Well, on the one hand, an artificial construct of circuits and information may exhibit behavior that is indistinguishable from consciousness; but on the other hand, its ontological status, as an artifact of human creation, rather than a direct product of the Creator, considered as the central question here, of doctrinal and spiritual significance, clearly suggests that maybe no, it isn't OK to bury a computer with full religious observances."

Our reporter returned to Chip of Ages to gather some statistics. In the first week of operation, grieving computer owners interred 23 Commodores, 11 Ataris and one Apple (a victim of compucide, it had been dismembered with a chain saw by a jealous spouse). Watson noted that a major problem faced by surviving owners is guilt: the nagging feeling that they may have done something to hasten the demise of their silicon buddy. "Avoid overheating, clean your drives once a year, and don't be flipping the power switch on and off all the time," he cautioned, "and your computer will probably outlive YOU."

April Fool!

—Mike Markowitz



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TURBO Pascal

Manufacturer: Borland International
For: Apple, IBM, and IBM Compatibles

If you require a transportable, low-cost, fast, efficient, and easy-to-use Pascal compiler, with a very nice editor, the versatile *TURBO Pascal* will satisfy your need, whether you're a student or a professional.

TURBO Pascal comes in two flavors: Apple and IBM (including IBM compatibles). There are three implementations: CP/M-80, CP/M-86, and MS-DOS/PC-DOS. This makes *TURBO* fully transportable among the implementations *if* the user restricts code to Standard Pascal (*TURBO Pascal*, like *UCSD Pascal*, has program extensions which enhance the Pascal language) and to those parts of the language which are common to all three implementations. The *TURBO Pascal* Reference Manual clearly defines those sections of the manual which are common to all implementations. This review addresses use of *TURBO Pascal* on the IBM PC.

At a cost of about $50, *TURBO Pascal* is a real bargain when compared to other Pascal compilers (the IBM Pascal compiler retails for $300; Apple for $350). But *TURBO* is more than just inexpensive; it's fast, efficient, and easy to use.

The Reference Manual boasts that *TURBO* provides "compilation and execution times second to none." After working with another compiler, I'm convinced Borland's claim has merit. *TURBO*'s compiler directives have been set to minimize execution time; it is amazingly fast. But beware. The Reference Manual warns that programs may behave strangely if you ignore these compiler directive defaults. For instance, EOLN and EOF do not behave correctly if the user neglects to include a compiler instruction in the program (I speak from experience).

Using only 28K to 33K of disk space for the *TURBO.COM* program, *TURBO* is very efficient. Additionally, the user has the option of compiling to memory or to disk, a nice feature if disk space is a concern. (Compiling to disk does not appear to affect compile time.)

The *TURBO* compiler is not only very fast, it is easy to use. When a compile error is detected, an error code is displayed, the editor is re-entered, and the cursor indicates the error position. If the user chooses to invoke the *TURBO.MSG* program, the error message is displayed on the screen with the error code. If *TURBO.MSG* is not invoked, about 1.5 KB of memory is saved, but the user will need to refer to the Reference Manual if he or she is unfamiliar with the error codes and their corresponding error messages. Unfortunately, a few error codes are misleading. For instance, error code *41* (Unknown Identifier or Syntax Error) can occur when an "END" is missing, even though error code *14* (END expected) is reserved for this error. Matters are further complicated when the cursor points to the supposed error several lines below where the error actually occurred. However, these misleading error codes do not occur often and pose no significant problems.

One of the best features for *TURBO Pascal* is the editor. It is delightful. The commands, with some minor exceptions, are identical to those of *WordStar*. Even with no previous *WordStar* experience, the user will find the commands simple to learn and easy to remember. The *TURBO* editor behaves very much like a word processing system in that entering system modes does not require special commands. *Apple Pascal*, for example, requires that you select the desired mode (I for insert, D for delete, etc.) make the desired changes, and enter a two-keystroke command for system acceptance. *TURBO* eliminates these unnecessary and tedious system commands. You simply insert and delete. In addition to the *WordStar* commands, the IBM PC cursor control keys, as well as some function keys, have been implemented. This makes cursor control a breeze, allowing great cursor positioning control. The INSERT/OVERWRITE toggle key has also been implemented, saving many keystrokes.

The Reference Manual provides ample programming examples and defines Pascal terminology and functions but, as the manual states, it is not intended to be a Pascal tutorial; the assumption is that the user has a fundamental knowledge of Pascal. Even so, I find that manual very helpful as a supplement to required textbook material; its only minor drawback is the layout. For example, the subject index is actually a separate appendix, placed between the last chapter and the first addendum. To add further confusion, there is an Addendum Subject Index which can be easily mistaken for the Subject Index. However, the layout deviations are minor and, for the most part, the Reference Manual is easy to use and comprehensive.

At a cost of about $30, the *TURBO Tutor* supplement can be very useful. If you are familiar with Pascal programming, this tutorial may be unnecessary. However, I would recommend purchasing *TURBO Tutor*, if for no other reason than to get the tutorial diskette. This diskette contains the LISTT program, providing many formatting options for program listings. While the TLIST program is included withe the *TURBO Pascal* diskette, TLIST lacks many of the options of the LISTT program. And LISTT is furnished in source code so the user can tailor the program listing to his or her specifications. The *TURBO Tutor* diskette also contains the source files for the many examples *TURBO Tutor* provides. For novice Pascal programmers, *TURBO Tutor* is an excellent companion to *TURBO Pascal*. It is easy to understand, leading the reader through fundamental Pascal concepts to advanced programming techniques.

TURBO Pascal is an excellent software package, and for the price it's hard to beat. *Apple Pascal* can be purchased for around $300 more than *TURBO*, and it does not offer the outstanding features that *TURBO* offers: extremely fast compilation times and an editor that puts some word processing systems to shame.

— Karen M. Sullivan

SeekEasy

Published by: Correlation Systems
Minimum requirements: 128K, 1 drive
For: IBM PC and Compatibles

"Is there a software program on the market for data storage that is easy to use?" You may have asked this question more than once at your local software store, only to find out that after a two-hour session with the tutorial disk, the package is more trouble than it's worth.

Seekeasy, as the name implies, is a simple to use and operate data storage and retrieval system. *Seekeasy* is not a complicated database management or report-generating system, but rather a high-capacity note-pad or electronic card file with all of the search and recall ability of packages costing hundreds of dollars more.

What makes *Seekeasy* simple to use is primarily the fact that there is no format to set up, no fields to worry about, and no complicated 300-plus pages of documentation to study. It is almost too simple. Just type in your data and save them. That's all. If that sounds easy, you will find it even easier to search and retrieve your data, because you don't even have to spell correctly! That's right. *Seekeasy* will find anything which is even close to your inquiry.

The logical assumption, then, is that a filing package this simple must be very memory intensive. Not at all. In fact, this single disk based system can handle up to 4,000,000 characters (not files) or the maximum number of bytes available on the disk.

All functions of *Seekeasy* are accomplished on a single disk, including printing, entry, searching, editing, and data storage. This eliminates the time consuming (and frequently error-producing) problems associated with disk swapping. The program is not copy protected, thus allowing back-ups to be made, and, more importantly, allowing different types of data to be stored to separate disks.

Of course, there are limitations to any program, and *Seekeasy* does have two serious ones. First is that each item of data is limited to two lines of text. The second limitation is the single print format. You can only produce hard copies exactly as they are typed in and appear on the screen. The limitation that does not, in fact, exist is a slow search, as is usually found with disk-based data. *Seekeasy* is able to query at a rate of 5,000 bytes per second from a standard drive; and twice that speed in a system equipped with RAM disk.

Seekeasy has been thoroughly tested on all PC models and compatibles using CP/M 2.0 - 2.2, MS-DOS 2.0 or higher, and PC-DOS 2.0 or higher. Minimum requirements are 128K with a single drive; the program supports hard disk systems and either color or monochrome monitors.

Seekeasy is currently available only by mail from Correlation Systems. The cost is $87.00, plus tax and $3.00 shipping and handling. A demo disk and manual (all 40 pages of it) are available for $15.00 (plus tax and shipping) which will be applied toward the purchase price of the package. One interesting note about the demo disk is that it is a working program. You are encouraged to enter your own data onto the demo; however, the program has been modified to accept only about 4,000 characters of information.

If your needs are limited to any easy-to-use information filing program, don't spend the extra money for a full-blown data base. *Seekeasy* will probably work fine for your needs, and the time you save in learning to operate this program versus a more complex data base system could be better spent in organizing your data.

— Doug Pencille

Rags to Riches

Published by: Chang Labs
For: IBM PC and Compatibles
List Price: $100 for each of four packages

Rags to Riches can best be described as an easy-to-use small business accounting system. The software is actually made up of four packages: General Ledger, Accounts Receivable, Accounts Payable, and Sales Invoicing, each of which can be used individually or together in any combination.

The program operates on three different levels: the "learn" level, in which the program displays complete information on all the commands in the bottom window of the screen: the "show" level, which shows an abbreviated version of the same help in a single line across the top of the screen; and the "expert" level, in which there is no help. The user can toggle through the various help levels at any time by hitting the "F10" key. When not used for help functions, the bottom window gives the user an account summary of all the individual transactions as they take place in the top window, which is where the actual work takes place.

The program is a true double entry system, unlike most of the popular small accounting packages, thus giving the user the true balance sheet in the GL package. The system has no inventory program, however, its structure allows it to interface with other programs such as data bases.

The total system is extremely easy to use, much easier than any other accounting packages I'm familiar with, and I found the manuals very helpful in getting me started, even though you could run the program without reading a word. At a price of just $100.00 per package it's a real bargain. The programs will work in either 40- or 80-column mode with color or monochrome monitor. Its one limitation is that there can only be 96 accounts per package, which makes it unsuitable for larger businesses. I heartily recommend it for all users who fit within its parameters.

— Kim Nelson

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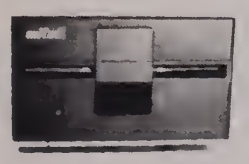

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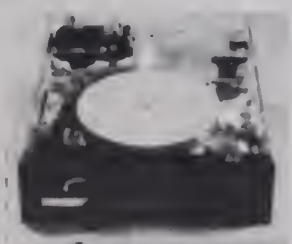

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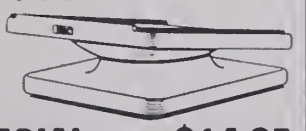

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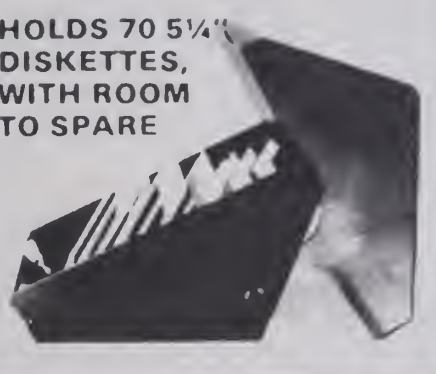

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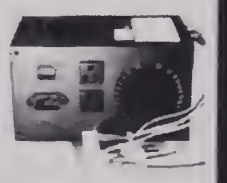

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SMOOTHTALKER

The Latest Word On Speech Synthesis

By Ken Goehner

A LITTLE OVER A YEAR AGO, Macintosh came on the market. It came into this world armed only with a word processor, a drawing program, and the potential to do just about anything computer-related in an easy-to-use, non-threatening fashion. Programmers and developers have succeeded in scratching the surface of what the Macintosh is capable of, and are beginning to move beyond what is normally perceived as the province of the microcomputer.

Move over, HAL. Mac has something to say, and say well.

In August of 1984, First Byte Inc. introduced *SmoothTalker*, the first (and, to date, only) speech synthesizer for the Macintosh. *SmoothTalker* represents a major breakthrough in speech technology; it employs an enhanced set of algorithms to improve the quality of speech, and the entire package fits quite neatly onto one disk.

The accompanying documentation is a short overview called "Freedom of Speech in Just 60 Seconds." Even if you have never seen a Macintosh before, following this guide will have your Mac up and talking a minute after taking the disk out of the box. This auditory experience can be a little eerie at first, but that's part of the fun.

The voice itself can best be described as somehow not exactly totally unlike the human voice. If you have ever seen *Battlestar Galactica*, try and imagine what a Zylon comedian would sound like.... According to First Byte, SmoothTalker is supposed to be something of an electronic "Tootsie," having both a male and female voice. As of this writing only the

Clifford? Arf! Clifford? Arf! Clifford? Arf! Clifford? Arf! Clifford? Arf! Clifford?

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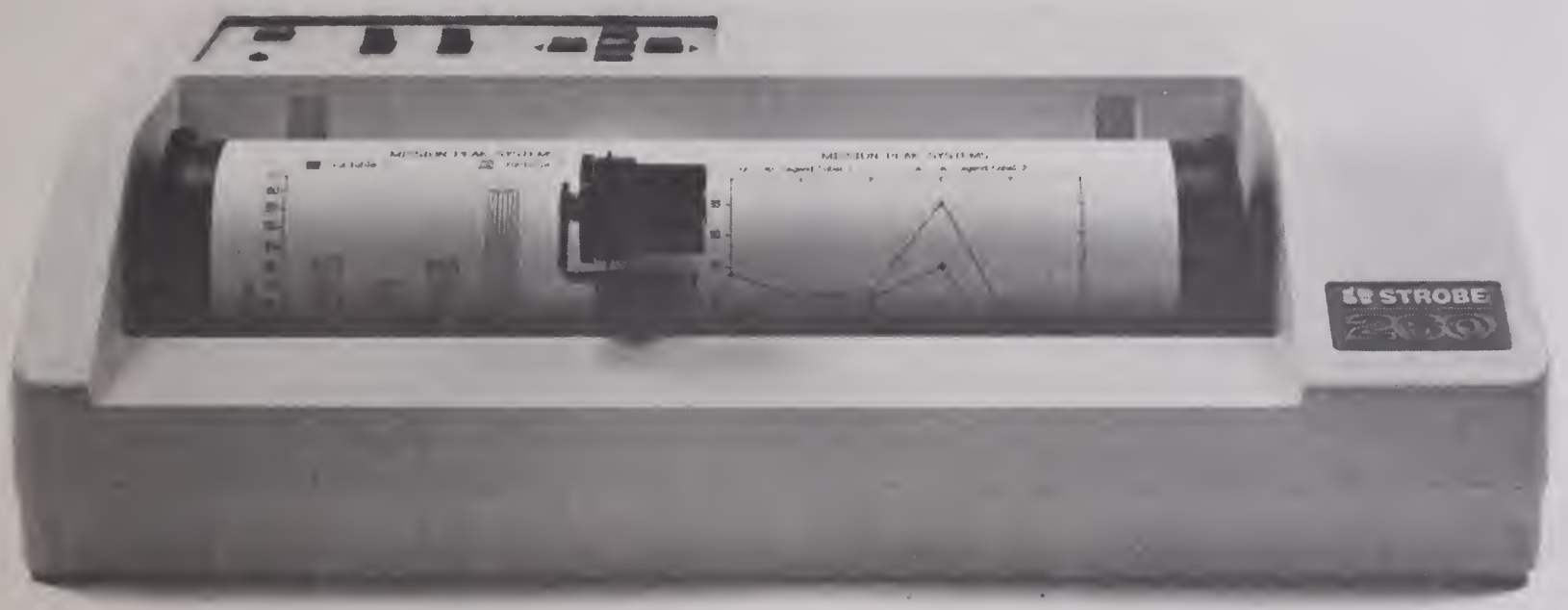

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male voice is available, and the version with both voices will be out sometime in April. So, when you buy this program, be sure to fill out the warranty card and mail it. First Byte will send you a free update as soon as it's available.

If you're hopelessly curious about the voice, you can call (714) 536-0086, extension 999, any time (24 hours a day) for a taped demo.

SmoothTalker is wonderfully easy to use. It operates on a highly intuitive level, and is arrayed in the standard Mac format. If you have any *MacWrite* experience and are feeling adventurous, you can have *SmoothTalker* saying some pretty interesting things in very short order — it swears very well, and seems to like Romance languages with reasonably consistent pronunciation rules, *e.g.* Latin, Spanish, and Romanian.

For those who prefer to read the instructions first, or want to get at the right high level functions of *SmoothTalker*, there is an onboard User's Guide that can be read on the screen, consulted while creating a file, and even printed if desired. The Guide is very well-written, and provides tutorials and explanations of how to use *SmoothTalker* to its full advantage. It is set up in "chapters" that can be accessed through the menu or by flipping the "pages" (Prev Screen/Next Screen) and covers everything from "How to Use the Guide" to "Computer Programming Interfaces," which covers using *SmoothTalker* in your own programs. It has several "sayable" examples that help illustrate complicated points both graphically and phonically.

A good example of this is in the discussion of "Using Phonetics" — writing a document in phonemes (a phoneme is the smallest unit of speech in a word), 6IH[NG-g1IHSH is pronounced "english" with an upbeat lilt.

This may seem a tough way to write, but if you want your Mac to speak with a Boston accent — "Ah pahked the kah in Hahvahd Yahd" — this is the most linguistically proper way to do it. Nitpicky perhaps, but important if you are interested in using *SmoothTalker* as an analytical tool for studying the nature of language. Of course, you can also have *SmoothTalker* say "Hahvahd Yahd" (spelt that way in the document) for fun; it's just not very scientific, and you may have to experiment a little before getting a suitably incorrect spelling.

Whether you've been hacking around the program, or actually read the Guide (when all else fails, read the directions), you are bound to run across some truly remarkable features. To start with, *SmoothTalker* recognizes common English conventional symbols such as $, @, +, and % and pronounces them as dollars, at, plus, and percent. It interprets common abbreviations such as Mr., Mrs., Ms., Dr., and St., the same way.

There is a function called the "Exception Dictionary" which allows you to preset the vocal definition of an abbreviation, an acronym, or a word. When properly set, *SmoothTalker* can read in the text 'Mac,' and say "Macintosh," read 'RAM' and say "random access memory" or even read 'beast' and say "heffalump." Every time *SmoothTalker* encounters one of these predefined words within the context of a document, it will say it as defined.

It is important to note here that *SmoothTalker* does not understand everything you ask it to say. While it does understand '+' it does not comprehend '-' (minus), '×' (times, or multiplied by), or any part of the Optional Character Set that is not an imbedded command character, and it won't pronounce those either. The closest you can get to division is the '/'; 9/3 = 3 which will be pronounced "nine over three equals three." *SmoothTalker* does not understand Polish, Reverse Polish, or Scientific Notation either. Attempts can be made to teach these forms to *SmoothTalker*, and they will work in the Dictionary, but not in the documents. We have it on good authority that these problems are being looked into.

SmoothTalker also provides inflection in accordance with the punctuation in a sentence. A comma will provide a pause. A question mark will cause the last word to go up in register, and so denote a query. An exclamation point will speed up the word preceding it and give a sense of urgency. Different speech values can be encoded very easily into the document to provide a dynamic variance of inflection (without resorting to phonemes).

Clifford? Arf! Clifford? Arf! Clifford?

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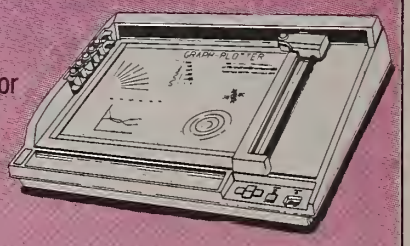

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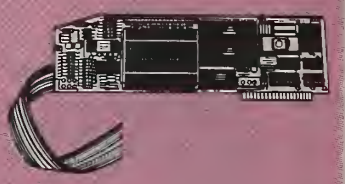

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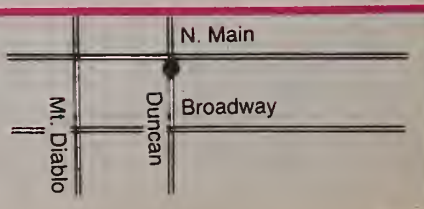

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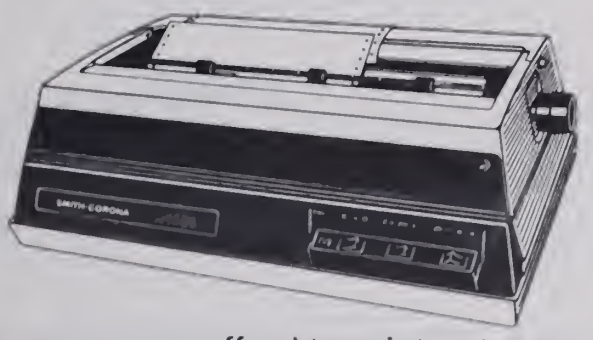

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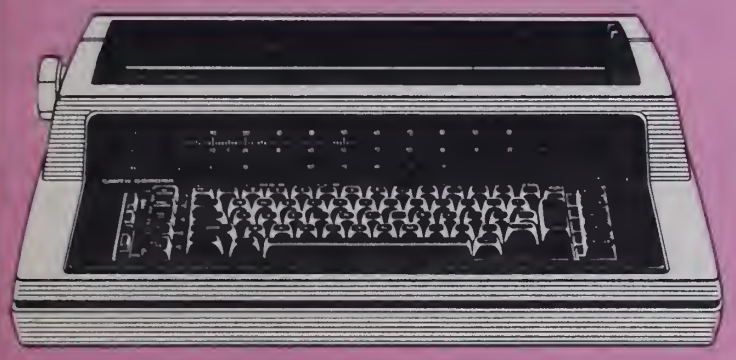

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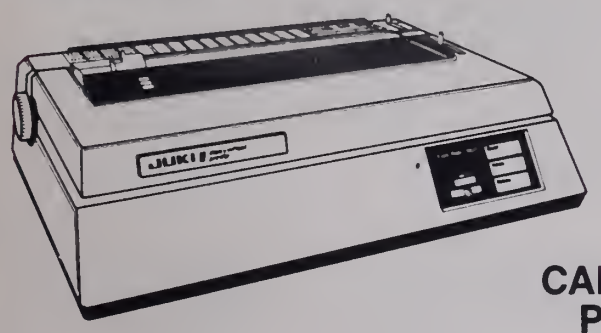

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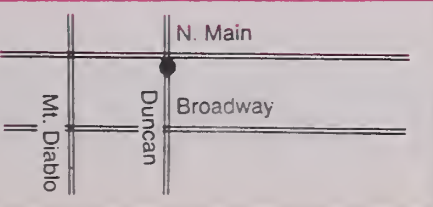

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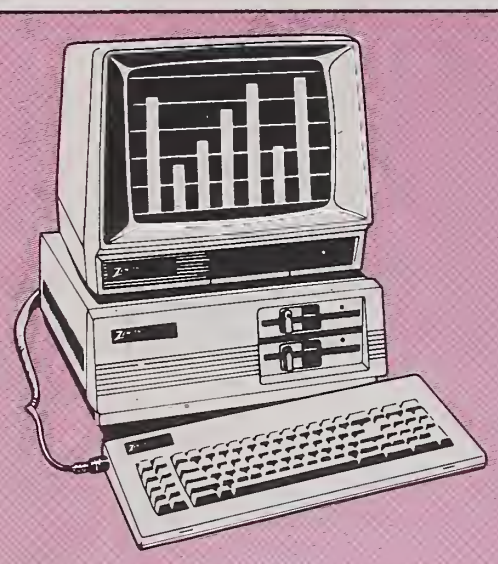

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Number of open slots	**4**	3
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Monitor	**included**	not included
Power Supply	**165 watt**	63 watt
Software: MS-DOS 2.11	**included**	not included
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Price	**$1895**	**$2785***

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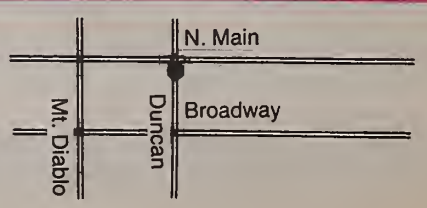

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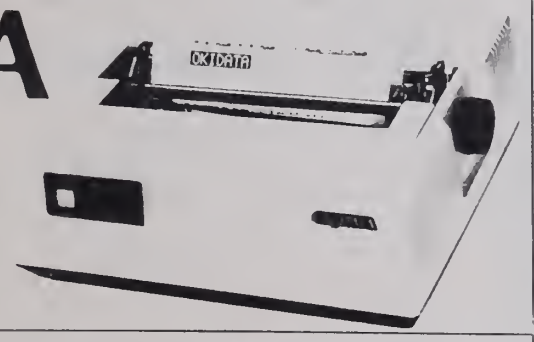

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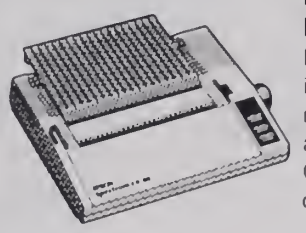

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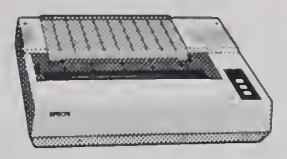

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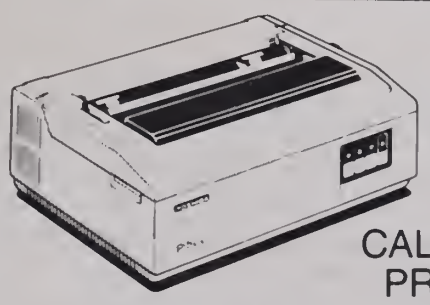

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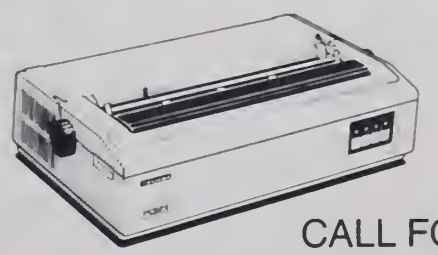

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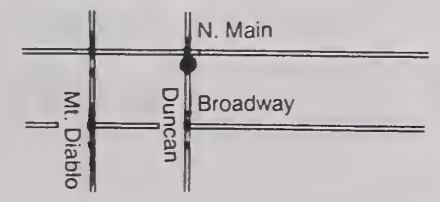

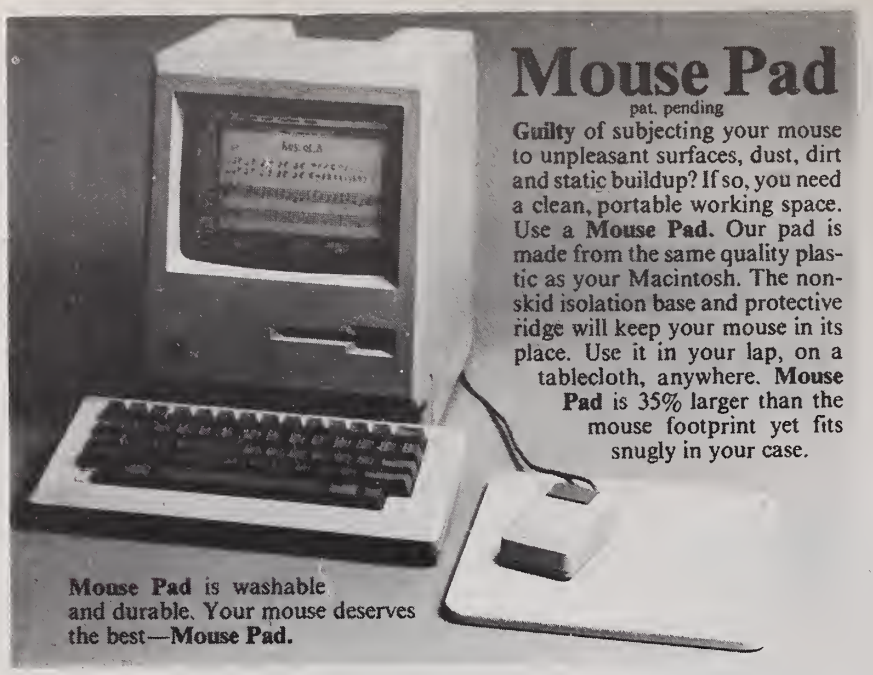

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Then there is a control panel that allows you to control the speed, pitch, volume, tone and sex of the spoken document. Values (except for sex) can be set at any level from one through nine, though it is a good idea to be careful with the volume settings — Mac's speaker distorts easily.

SmoothTalker is not limited to speaking its mind on files created within its own framework. It is more than happy to read aloud any ASCII text file, like those created by *MacWrite*, *MS Word* or *Multiplan*. This feature can be especially useful to data entry people or bookkeepers who want verbal confirmation of their input and writers who need that never-available person to read their stuff for typos (*SmoothTalker* has little sympathy for typos), tense consistency, and all the other ailments that can infect prose when an author gets too close to her/his work.

SmoothTalker hasn't learned to sing. Yet.

There are a lot of different direct applications for *SmoothTalker*, some serious, some not. On the light side, it makes for an interesting recorded message on an answering machine and can produce a wide range of high tech noises that can be used in a number of media, such as radio, theater, and video.

In a more serious vein, *SmoothTalker* has medical and educational applications. *SmoothTalker* can give a voice to mute persons and people who have undergone a laryngectomy or any other throat surgery. It can be useful in speech therapy, and has far-reaching implications in a bureaucratic hospital setting which needs to process information on a large number of non-reading individuals in a short amount of time.

Best of all, *SmoothTalker* can give a new freedom to the blind and vision impaired. Not only can *SmoothTalker* read ASCII files from disks, it can also download and say information from databases accessed via modem. It is not a great mental leap to imagine databases created specifically for blind users that will "read" news, information, and stories through *SmoothTalker*. The "talking" electronic bulletin board potential is staggering.

Granted, this is all vaporware, but the possibility exists. Closer to reality is the way that *SmoothTalker* can interface with other products to provide services to the visually impaired, specifically, a device called the Omni-Reader, designed and manufacturered by Oberon International Ltd. of Hemel Hempstead, England. This is an optical scanning device that can convert typeset materials into ASCII, after which they can be read by *SmoothTalker*.

For educational purposes *SmoothTalker* has direct uses in the areas of teaching typing, spelling, and, to a limited degree, grammar (you can gain a true appreciation for the parts of speech when you hear a computer using words and phrases like 'fer sure,' 'grody,' 'gnarly' and 'gag me with a spoon'). It also has uses in teaching English as a second language, particularly in the area of self-paced studies for adults.

Unlike other speech systems that require additional boards or other peripherals, *SmoothTalker* is implemented entirely in the software. You simply insert the disk and your Mac is ready to recite. What this means is that *SmoothTalker* can be used in other software programs (with licensing agreement), as well as blasted into ROM.

What this will mean to the consumer is hard to call. In terms of this new development in software capabilities, we can look forward to an amazing array of vociferous education, entertainment, and business products, as well as a melange of self-explaining software demos and tutorials. In the worst-case scenario, all of these products are trying to outshout each other in your favorite computer store.

As for the ROM possibilities, again it's hard to call. This new technology may very well have your washer, dryer, smoke alarm, microwave, car, and copying machine talking to you. The advantages are obvious, if they are tastefully handled. Imagine a machine that can diagnose its own problems and tell you how to fix them, or a fire alarm that can announce the most propitious means of exit. The applications are endless in both the commercial and consumer markets. (First Byte, Inc., 2845 Temple Avenue, Long Beach, CA 90806, (213) 595-7006.) □

Clifford? Arf! Clifford? Arf! Clifford?

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THE PEOPLE BEHIND THE PRINT SHOP

by Ken Goehner

The home computer market is an interesting thing to study. By examining the products being purchased by Joe Average Consumer you may discover things about society and personal priorities in the home computing environment. Check the top ten best seller lists of publications like *Billboard*, and you will find a most amazing phenomenon: the name *Print Shop* recurs frequently as the number-one-selling software package in America.

More popular than tax preparers, checkbook jugglers, stock market quote software, spreadsheets, music programs, and shoot 'em up games. *The Print Shop.* A program designed to create greeting cards. In a world of H-bombs and diminished expectations, that's the kind of trivia that makes it seem like there's hope for humanity yet.

The Print Shop itself is far from trivial. It employs some of the most advanced graphic technology available on microcomputers and can be used by anyone in a matter of minutes without consulting the documentation or knowing any more about computers than the location of the power switch. *Print Shop* is totally menu driven and can be used to create greeting cards, letterheads, stationery, posters, signs and banners of any length by simply choosing and arranging various graphic elements using the keyboard, joystick, or KoalaPad. It features eight type styles in multiple sizes and in solid, outline and three dimensional formats, text editing, automatic centering, left and right justification, and proportional spacing. It has an on-board graphics library that contains nine border designs, ten abstract patterns, dozens of pictures and symbols, a selection of swirling animated patterns that can be frozen and used for an endless variety of background designs, a graphics editor that allows you to create your own images as well as modify the graphics in the "library," and a selection of specially pre-designed cards you can personalize at the touch of a button.

In addition, *The Print Shop* has a recently released companion disk called *The Graphics Library*, which has 120 images stored on both sides, all of which can be arranged in the same manner as *Print Shop* images (it is important to note that the *Library* is only a file disk and can only boot a demonstration without the *Print Shop* disk).

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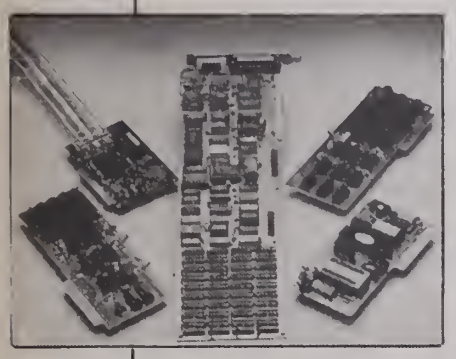

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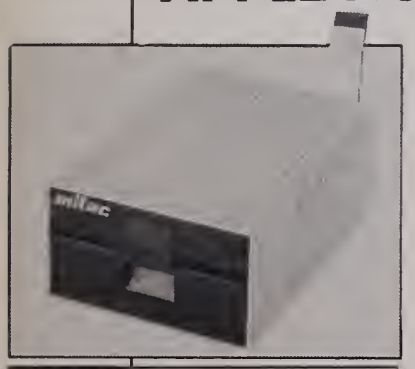

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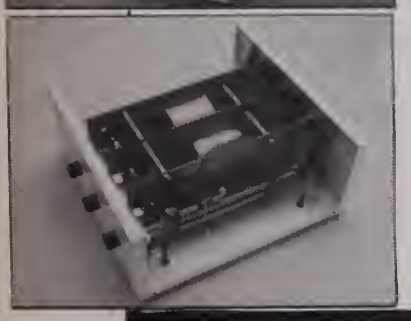

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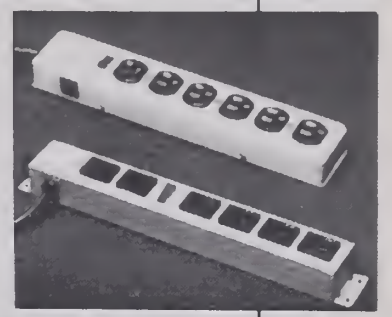

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What's more, *Print Shop* can take images generated by any other graphics package and combine them with the *Shop* graphics or fonts, or just print them out as they appear, without the use of a Grappler Card or a utility program like *ZoomGrafix*.

The Print Shop and *Graphics Library* are available for the Apple II series (48K minimum), Commodore 64, and Atari, with versions planned for the Macintosh and IBM PC, XT, AT, PCjr. and their ubiquitous clones. *Print Shop* will support virtually every major dot-matrix printer on the market, and colored pin feed paper and ribbons can be ordered to really give your computer that certain artistic flair.

With all these options and abilities, *The Print Shop* is much more than a sophisticated toy. The applications are as varied as your imagination, and the popular acclaim has been astounding: the folder of fan mail and letters of commendation is over an inch and a half thick. Some of the more exciting uses that Broderbund has heard about from grateful users include education (teaching spelling, art, and beginning computer literacy) and medicine (as an effective tool in the areas of physical, art, and cognitive therapy).

That's pretty impressive for any piece of software, let alone one that is commonly available in the $45-50 range, and this remarkable accomplishment has not gone unnoticed by the industry analysts. In 1984 alone, *The Print Shop* won six major awards from a broad field of admirers: CES Software Showcase — Outstanding Original Programming, Personal Productivity for the Apple (awarded by EIA/Consumer Electronics Group); October Software Best Seller — Home Management/Productivity (awarded by Home Computer & Software Merchandising); Software Award Winner (awarded by *Learning Magazine*); Program of the Year — Award of Excellence (awarded by *Computer Entertainer*); Most Distinguished Computer Product (awarded by *Enter Magazine*); Most Notable Award — Software of the Year Awards (awarded by the *Classroom Computer Learning Magazine*).

Obviously this is a pretty special program, and it speaks very well for its creators, Pixellite Software, or David Balsam and Martin Kahn (as it reads on their awards certificates and royalty checks) — two very special people with very different backgrounds. David is a consummate musician, playing guitars, drums, and keyboards. He started his musical involvement at age 11

Corey Kosak. Photo: Pat Johnson

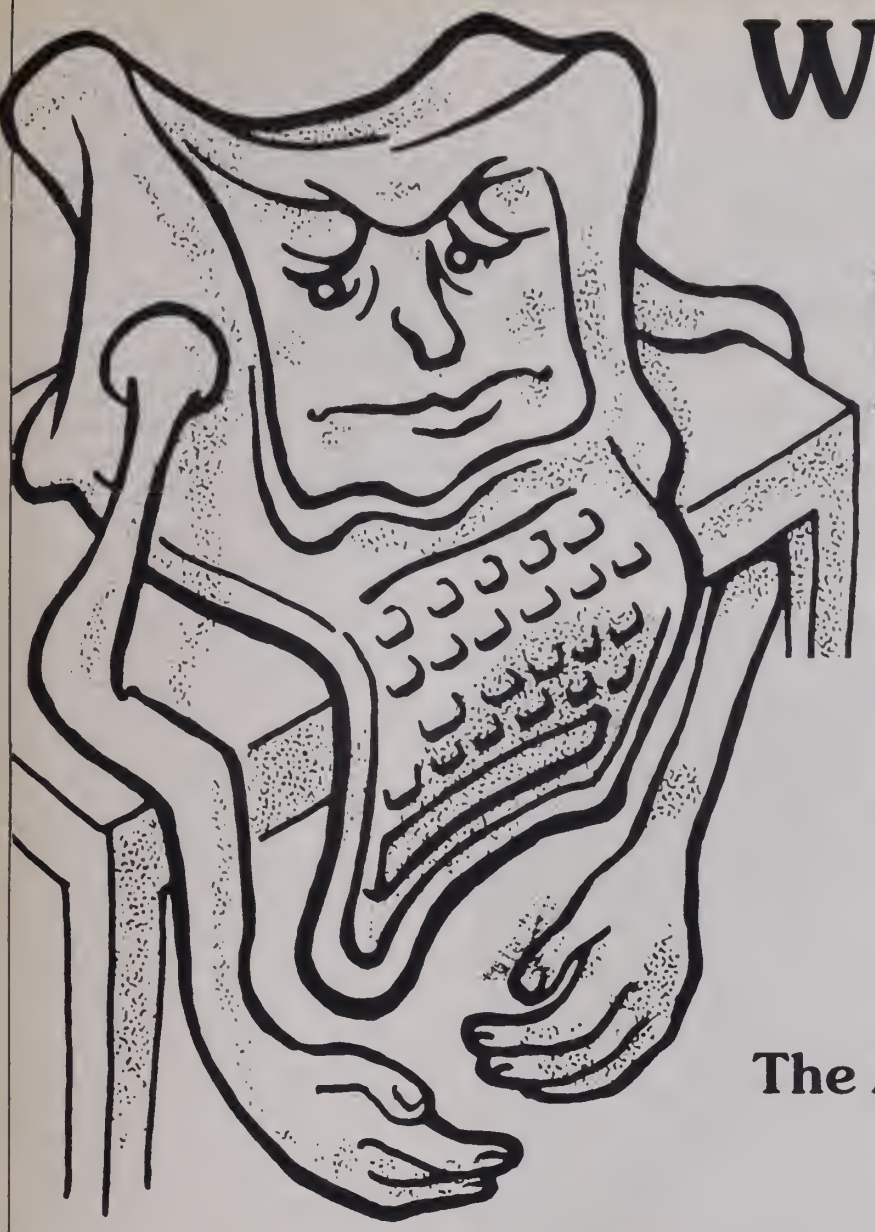
"Everybody has talent. We just decided to help foment the revolution by liberating people's artistic imaginations. Our own brand of subversive software."

in New York City and has stuck with it for the past 18 years, with time out to take a couple of computer classes and earn a living as a software specialist and trainer for several computer specialty stores. As he puts it, "I never wanted an education to get in the way of my learning."

Martin is a native of Los Angeles, and a graduate of U.C. Berkeley with a double major in mathematics and linguistics. His primary interests lie in the arts, particularly in the areas of computer generated graphics and animation. He has worked as a graphics programmer for Northstar Computer and Broderbund Software, and tried to make it as a "fine" computer artist in the gallery scene. "A lot of so-called experts just don't regard computer generated art as a real medium of human expression. They're more than happy to sell lithos and prints and other examples of low tech reproduction, but they don't seem to understand that there is as much, if not more, artistry in graphic programming as there is in oil painting. I'm good with a brush too, and I know this as a fact." Martin now finds himself quite busy as the main artistic force behind Pixellite Software, and though he won't admit to it he seems to have a certain sense of amusement (or perhaps righteous vindication) at being one of the most widely distributed computer software artists in the world.

David and Martin met a couple of years ago at a party at Martin's house. David was entranced by Martin's artwork, which hung everywhere, obscuring the walls and more than one window. "When I first saw the paintings, my jaw very nearly hit the floor. They had the quality of an Escher or a Vaseralay, three-dimensional shapes moving behind other shapes, distorted perspectives, fascinating topological landscapes. I knew then that there must be some commercial application for Martin's talent."

They became good friends before they started in partnership to produce software. Their first attempt didn't get too far. David, the more vocal of the two, explains. "It seemed that there was a lot of beauty to computer enhanced graphics, a lot of things that people would like to be able to do for themselves, without being a computer whiz, or even an artist. So we thought we'd try to make a product out of it. Our first try was a greeting disk sort of a thing—the concept was to have some animation on the screen that would portray a message for special occasions, something with swirling 3-D



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graphics, maybe play a song and have different messages flashing across the screen. We thought it would be fun to make something like that, so you could send it to a friend and they could put in on their computer and be amazed by it....It didn't work. Actually it did work, but nobody wanted to publish it.

"We called that one *Perfect Occasion*. It was, and still is, a good idea. I believe that there are now some people publishing similar programs. Our problem was that there was not a large enough installed user base — not everybody's grandmother had an Apple then, and seriously, how many Valentines do you send to members of your user's group?

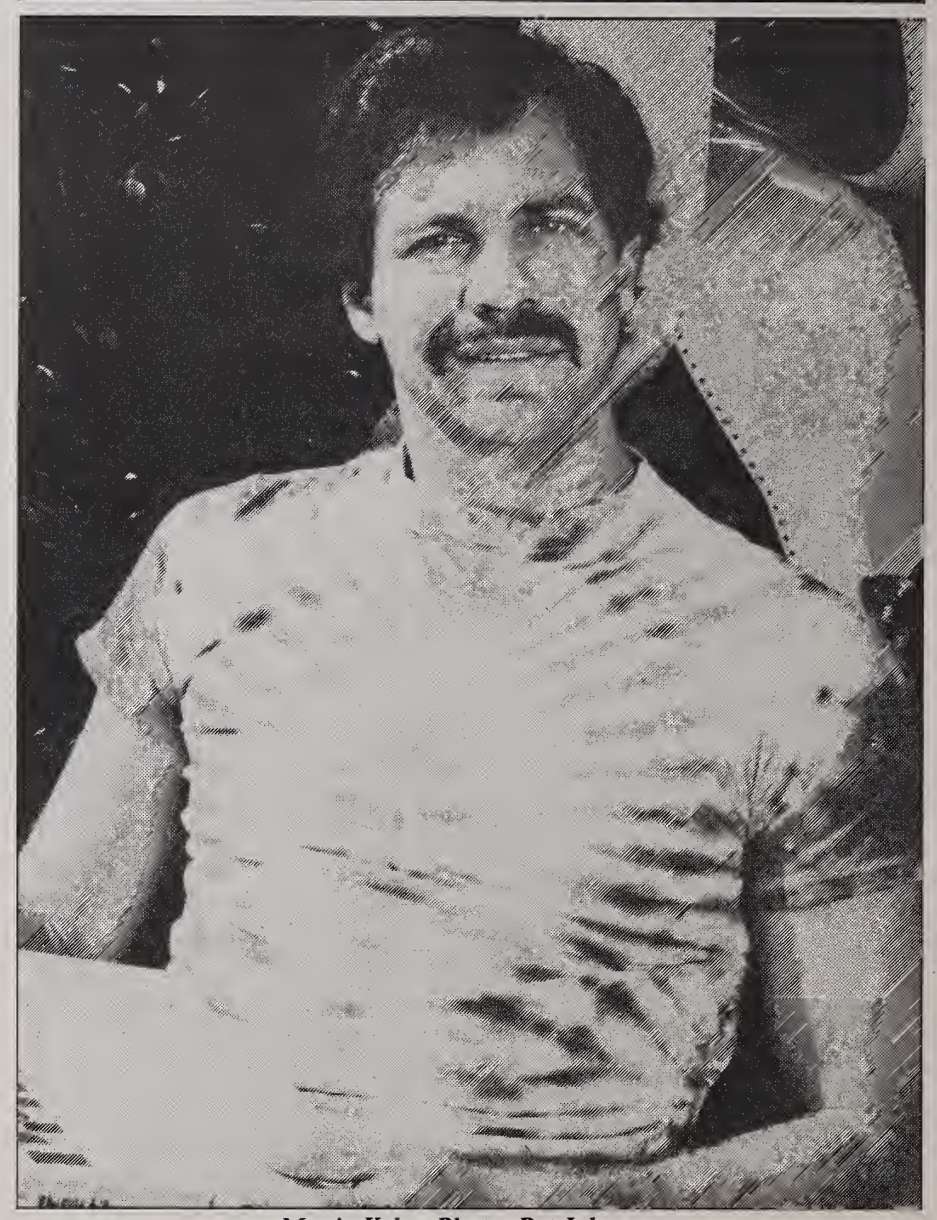
"Another problem we had was that the program was still too open ended—it relied too much on the drawing ability of the user. We began to realize that the audience we wanted to reach was not the sort of folks that like to doodle on paper or *Graphics Magician* or what have you, but more the sort that have been taught from birth that they have no talent, or just picked up that ludicrous notion somewhere along the line. Everybody has talent. Martin and I just decided to help foment the revolution by liberating people's artistic imaginations. Our own brand of subversive software.

"In order to do this, we had to sort of formalize our working relationship. My greatest strengths are not in computing *per se*, but in organization—stepping back and getting the overview, and then being able to work from that view. Oddly enough, it's a talent I developed as a musician and a composer. I understand structure and sequence. I became the software 'director' or architect.

"Martin is a brilliant artist and something of a programming genius. He started out writing programs for intelligent printers — to get ahead of the story a little bit, his experience is directly responsible for the quality of the printed image from *Print Shop*. All the images are stored in printer code, which affords a much higher resolution on the printout than graphics created on a screen-dedicated graphics program. At any rate, Martin and I formed an equal partnership and spent a year developing *The Print Shop*. We worked well together, and still do, but there were times....

"We eventually ended up with a product we were very pleased with. I don't know exactly how to describe it—I cringe a little when I hear people describe it as a 'friend'—but it is a very pleasant experience to use, very gratifying and spontaneous. It's easy to get excited about using it, it doesn't ask too many questions of you, it doesn't demand anything. It works more by presenting you with a scenario that enables a part of you, an explorative or creative part, to move out into a little world. In this case it's *The Print Shop*, and it's a little world of printing things. You're led down this path of different ways of putting letters and images on a page. It breaks the world up into finite modules that are represented on the main menu for greeting cards and banners and such. It's not an open system, like a *MacPaint*. It's deliberately limited, but within those limits there is an infinite number of things you can do. It's a real delicate balance of deciding where the limits are, and where is the openness. I'd say that the hardest part of designing a program is deciding what *not* to do. We started out with a lot of real good ideas, but given the concept of *The Print Shop*, which is graphic arts for the non-artist and non-graphics oriented person, we couldn't use them all. You can't give our target audience that much of an open system — they'll get lost in it, and that would soon replace fun with frustration, totally defeating the purpose of the program."

"We have a lot of fun with all the ideas that go flying around here. It's sort of like reaching a creative critical mass."



Martin Kahn. Photo: Pat Johnson

"There is no end to the number of really good projects we are coming up with."

There is the roar of a Porsche 924 from the driveway. Martin goes to the window and announces, "Corey's here." A moment later Corey Kosak walks in, grinning nervously and holding the detached front doorknob in his left hand. A few comments about Berkeley landlords later, the interview resumes, with Corey taking up the narrative.

"I got involved with Pixellite a little later in the game — I'm not a partner, I guess you could say I work for them....I started work at Broderbund Software in 1981, and when they needed an Atari version of *The Print Shop*, they asked me to do it. Around the middle of that project, Broderbund decided that the Commodore version was more important—so I did that. It turns out that the Commodore printers are like nothing else on the planet, so I wrote the drivers for them, and Martin took care of the more conventional printers. Then I went back and finished the Atari version. I just completed that last week in time to be free for my nineteenth birthday."

He blushes slightly and continues. "I guess I'm what you would call a whiz kid. I started playing with computers in the sixth

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5. THE SG-15 DOES THE IBM 12X6 GRAPHICS. THE RX-100 DOESN'T.
6. THE SG-15 DOES N/144 LINE SPACING. THE RX-100 DOES NOT.

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2. THE SD-15 HAS A FULLY-ADJUSTABLE TRACTOR FEED, WHILE THE FX-100 DOES NOT.
3. THE SD-15 CONTAINS BOTH IBM CHARACTER SETS 1 & 2, WHILE THE FX-100 DOES NOT.
4. THE SD-15 HAS A NEAR-LETTER QUALITY MODE. THE FX-100 DOESN'T.
5. THE SD-15 DOES THE IBM 12X6 GRAPHICS. THE FX-100 DOES NOT.
6. THE SD-15 DOES N/144 LINE SPACING. THE FX-100 DOES NOT.
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3. THE SD-10 HAS A NEAR LETTER-QUALITY MODE, WHILE THE FX-80 DOES NOT.
4. THE SD-10 DOES THE IBM 12X6 GRAPHICS. THE FX-80 DOES NOT.
5. THE SD-10 DOES N/144 LINE SPACING. THE FX-80 DOES NOT.
6. THE SD-10 LISTS FOR $449. THE FX-80+ LISTS FOR $569.
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4. THE SR-15 CONTAINS BOTH IBM CHARACTER SETS 1 & 2, WHILE THE LQ-1500 DOES NOT.
5. THE SR-15 DOES THE IBM 12X6 GRAPHICS. THE LQ-1500 DOES NOT.
6. THE SR-15 DOES N/144 LINE SPACING. THE LQ-1500 DOES NOT.
7. THE SR-15 DOES REVERSE PAPER FEED. THE LQ-1500 DOES NOT.
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9. THE SR-15 LISTS FOR AN UNBELIEVABLE $799 , WHILE THE LQ-1500 LISTS FOR $1,495. AN LQ-1500 SIMILARLY EQUIPPED AS A **STANDARD** SR-15 WOULD LIST FOR $1,665 , AND WOULD STILL ONLY HAVE A 2K BUFFER AND WILL STILL NOT BE TOTALLY IBM-GRAPHICS COMPATIBLE.

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4. ALL LIST PRICES QUOTED ARE BASED ON PRICE LISTS OF BOTH STAR AND EPSON AS OF JANUARY 1, 1985.

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"DETERMINED TO BE BEST — DESTINED TO BE FIRST"

grade. The junior high school had just gotten hooked up with a couple of teletype machines, and my math teacher thought it was a good idea to send me over there to play with them. I played *Hangman* and *Star Trek* and all of those. Then I started hanging around Radio Shack. The TRS-80 had just come out, and nobody knew anything about it, so I sat in the back of the store and tried to figure it out. That's where I got my real programming experience, reading all those Radio Shack manuals and just playing with the machine. The next step happened when the Apple II came out. Some businessman went out and bought one, and then called Radio Shack for advice. The salespeople introduced him to me, and this guy lent me his Apple for six months. It was great—I kept on calling him up, telling him I needed a second disk drive, an eighty column card, all the goodies, and he would get them for me. In exchange I wrote him some little financial program. I was fourteen then.

"Next I got involved in the Marin Computer Center, where you could rent computer time for real cheap. I met the director, David Fox, there and it was with him that I developed my first commercial piece of software, a program called *AppleSpice*, which was designed to extend and to fill the holes in *Applesoft Basic*. I met Doug Carlston (president of Broderbund) at an AppleCorps meeting where I was demonstrating *AppleSpice*. After talking business for a while, he lent me a complete Apple II system. I've been with Broderbund ever since. It's kind of funny—all this time I had still not bought a computer, people just kept on giving them to me. I still have that system too....I guess they'll make me buy it one of these days, but if things keep on going the way they have been, I'm not going to worry—I'm pretty much booked up for the next few years."

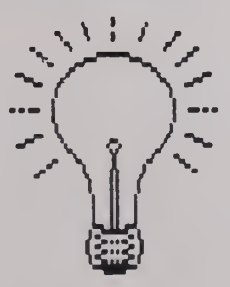
David Balsam. Photo: Pat Johnson

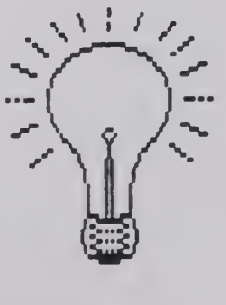
"After this next round of development, we intend to invade Alpha Centauri to expand our market."

David chimes in. "If I could have my pick of Broderbund's stable of programmers to work with, I would choose Corey. And he's doing it! We're all real excited about having him with us. As a matter of fact we're working with a lot of really excellent people — Chris Jochumson who wrote *Space Quarks, Track Attack, Arcade Machine* and did a lot of graphic work with Penguin Software's Roland Gustaffson, a hotshot utilities programmer; Don Williams, who worked on *Music Shop* and *PFS File and Report*; David Snyder, author of *Serpentine, Dazzle Draw*, and *David's Midnight Magic*; and Gini Shimabukuro, a graphics designer and computer classroom instructor.

"This is a real exciting group. We have a lot of fun with all the ideas that go flying around here. It's sort of like reaching a creative critical mass. There is no end to the number of really good projects we are coming up with, and the new crop of machines entering the market has expanded our potential applications astronomically. I mean that literally. One of our pet projects," he said smiling and patting a large stack of colored paper, "is right here. After this next round of development, we intend to invade Alpha Centauri to expand our market." □

Pixellite Computer Products





GRAPHICS GENERATED BY THE PRINT SHOP

In addition to designing software, Pixellite has branched out into the computer supply arena, particularly in products that support *The Print Shop*. The business seems to be doing exceptionally well—in a period of five months it's gone from two employees to twenty, and the orders are pouring in from all over the world. This is in large part due to the tremendous success of *The Print Shop*, and to the unusual nature of Pixellite's products—they are the sole supplier of *color* computer paper. Marketed under the brand name Brite-Line, their high-quality, heavyweight continuous form paper is available in eight colors (red, green, blue, pink, gold, yellow, pure white, and tan parchment); matching envelopes come in greeting card and #10 sizes. Pixellite also markets various sizes of printer ribbons in red, blue, green, purple, brown, and black—everything you need to get the most out of your *Print Shop* or other software program.

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AST Research

By John D. Gresham

FOUNDED FIVE YEARS AGO by three young computer engineers, AST Research has established itself as a growing, innovative force in the computer/electronics field. Such successful products as the popular SIXPAC memory/multifunction board for the IBM PC have made AST a company to watch. Currently located in two attractive buildings in Irvine, AST's headquarters convey an immediate sense of success and professionalism. Looking closer, you notice the people: young, energetic, and most of all, happy. All 400 of them.

As it turns out, both the company's financial success and the high employee morale are the result of careful planning and thought on the part of the founders, Thomas Yuen, Albert Wong, and Safi Qureshey. Unlike many small businesses formed by unhappy engineers and business people over the years, AST seems able to retain the spirit and energy of a small shop just starting out in spite of being a multimillion dollar corporation that just conducted its first public stock offering. Talk to anyone on the production line, in the service department, or just about anyone else in the organization, and you'll hear the same thing—appreciation of the opportunity to work at AST, and a determination not just to keep the company as good as it is, but to make it even better. AST, in turn, retains a strong commitment to its people: as foreign markets open up and production increases, AST is determined to keep as much production as possible at home for as long as possible.

Talking to Thomas Yuen, one of the founders, I found that AST's innovative product line and high employee morale are integral and interdependent parts of the company's success.

Can you tell us a little about yourself and the people who started AST?

Basically, the founders of the company, Safi, Albert, and myself, were engineers in minicomputer companies in Orange County. Our work involved the development of circuit designs for minicomputer applications. We felt, though, that our capabilities were far beyond those being utilized by the companies that we worked for at that time. So one day we got together and kicked around the idea of forming a company and doing *something*.

At this time, though, the capital necessary to get into a board-level manufacturing company had yet to be found. One idea was to form a consulting or job-shopping firm to do electronic design work for other companies in the Orange County area in order to generate the necessary capital to get the manufacturing operation going. We decided upon this option and generated a number of small proposals to assist other companies in their design efforts. Eventually several of them came through and we were on our way.

We successfully completed these programs, and about the same time (1981), IBM announced the introduction of their PC. We got one of the early PC's from a source in Texas and worked many long nights learning how the hardware and operating systems worked. This was very difficult at that time, as the PC systems manuals had not even been brought out yet. After getting a really good look at both how and why the PC operated the way it did, we decided that we wanted to put something out into the marketplace that would really be one step ahead of the competition. As a result, we quickly had several products out on the market.

Thomas Yuen. Photo: Ann Summa

"If you lose the focus upon a primary goal, you tend to lose your momentum towards *all* of your goals. Our perception of our competitors is that they are too interested in building *everything*."

What was it that you (AST) were trying to do when you first entered the market relative to the IBM PC?

Aside from just going into the market right away, we also wanted to separate ourselves from some of the other companies already in the computer market. This is because, at that time, we were very small, and we knew that there were several other companies, larger and better established than we were, already in the market. As a result, we had to respect the kind of forces that were there in the marketplace. So, we had to ask the question, "How do we distinguish ourselves from the direction the PC (IBM) market is going?"

We felt that the look and feel of the IBM PC was most suitable for the office environment. Based upon our experience in the minicomputer field, we felt that once you got the PC into the office, you had to be able to communicate with other computer systems. So aside from just coming out with memory expansion and multifunction products that fit what were then the needs of the business community, we also came out with sev-

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eral data communications products that were specifically aimed at the business office environment. I think that if you look, you will find that AST was the first company to offer a microcomputer-to-mainframe-computer data communications product for the IBM PC. We really wanted to align ourselves with the business community and its needs.

How has AST gone about the marketing of its products?

In terms of the marketing campaign for AST's product line, we have scheduled a campaign in which we appear to be getting progressively bigger and bigger. In tracing the history of our ads, one finds that we started with a small one-third page black and white ad. As we went on, we went to larger ads with color and other features which gave the impression of a growing dynamic company to the end users in the marketplace. The whole campaign was designed to establish credibility within the computer-buying community.

What market forces drive your marketing/engineering decisions?

You have to take a very wholistic view of the PC market, because it evolves at a *very* fast rate. There simply is not time to make many mistakes. In addition, the technology within the personal computer market is currently running way ahead of market demand. So you have a situation where you need to stay on the leading edge of technology. At the same time end users need to feel that you are a dependable company with a quality product. The credibility is *extremely* important. It's fine to have 32-bit microprocessors in your products, but the consumer *will* tolerate 8-bit speed and power if it is reliable and capable. They also want to know that the company that they buy a product from today will be around to provide service for that product in the future. There are a lot of people out there that are holding Osborne computers wondering if they will be able to get service and support for them. We are trying to avoid that kind of situation.

Why do you feel that AST has been successful in the PC aftermarket?

We feel that we were successful because of our focus. In particular, we wanted to attract the business users and focus our primary efforts towards those business users. If you look at our product offerings right now, you will find that they fall into three different areas. There are personal workstation enhancements, local area network products, and data communications products. To support these three areas, AST has a corporate focus towards how a business might develop its PC workstations within the working environment.

Can you give us some examples?

Certainly. A business starts with a single PC. As they become more sophisticated, they might find that they require more memory or additional functional power from that workstation. The business may wish to connect to information services such as the Dow Jones or CompuServe. They may wish to add more advanced I/O devices such as a mouse or laser printer. This stage represents what we call personal workstation enhancement.

Once the business has configured several workstations this way, they usually begin to think about linking the workstations together to share common data bases or diversify the workload. As a result, they begin to think about networking products. This takes them into the stage when the office connects all of its personal workstations into a single local area network.

The final stage happens when an office or department, which is part of a larger corporation or business entity, begins to want to draw upon the assets of a larger corporation's computer capability, such as a mainframe. This requires the office or department to begin developing a data communications capability between the office or department and the corporate mainframe.

And you see AST supporting the business or department at each of these stages?

Yes, I think that we saw this from day one of our existence. And it was very hard for us to believe that we would be able to support all of the products required at each of the stages. So from the very beginning, we went into joint or licensing ventures with a number of local area networking and data communications companies to help us develop the products that would fulfill our overall marketing strategy. This focus allows our product line to reflect the natural growth of PC data processing within the business environment.

Safi Qureshey (left) with Thomas Yuen. Photo: Ann Summa

"In a marketplace like ours, the first company to deliver a quality product is going to establish a leading position in that part of the marketplace."

So you feel this focus has been a primary reason for your success in this extremely competitive environment?

Exactly. And what we saw was an opportunity to go after one sector of the market. This was the business automation area. What I think some of our competitors have done is attempt to go into a number of areas such as process control, games, and other things, which tends to diversify their attention. In our opinion, no one company is big enough to cover all of these areas at the same time. If you lose that focus upon a primary goal, you tend to lose your momentum towards all of your goals. Our perception of our competitors is that they are too interested in building *everything*. One seems to be interested more in developing its product line through acquisitions than in in-house development. Another is interested in distributing other people's products. As a result, they try to grab too much of the market share all at once, and as a result, tend to dilute their overall efforts.

And this focus allowed you to maintain your momentum and gain a lead on your competitors?

Yes, but market understanding and focus is only part of it. I think one of the most critical elements to success in this market is speed. For example, when IBM announced the PC/AT at the Dallas show, in ten weeks' time, we announced a multifunction product for the AT. In fact, I think that you will find that even today, AST is the only company that is shipping multifunction and other add-on products for the AT *in quantity*. This extremely short reaction time is not unique for us: our first memory expansion product for the PC also took about ten weeks. To the best of my knowledge, no other company has yet delivered any products for the AT. This lack of a short reaction time by some of our competitors is probably one of their biggest weaknesses. In failing to recognize, in a marketplace like ours, that the first company to deliver a *quality* product is going to establish a leading position in that part of the market, they fall behind and are viewed as "catching up" or "copying" that company.

Would your SIXPAC multifunction/memory board fall into this category?

Very much so. The SIXPAC was the first major 384K memory/multifunction board for the IBM PC. Now we see a number of "PAK" copies trying to tie in with the "PAC" name. It took six months, for example, for Quadram to come out with their answer to the SIXPAC. In the meantime, the market share of this product has slowly moved in our favor. By the time your readers are seeing this, we will probably have shipped over 500,000 SIXPACs. When you consider the total number of PCs shipped by IBM since 1981, we have our board installed in a *very* large share of those machines. This becomes even more significant when you note that approximately half of the PCs out in the market have *never* been upgraded with *any* product.

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Obviously, AST is more than just you, Safi, and Albert. Tell us something about the people who work for you here at AST.

One of the things that we try to address very seriously is that our people don't work *for* us, but work *with* us. Like every other company, AST has a company culture. That culture is probably best reflected by our people's team spirit. From just three people when we started, AST has grown today to approximately 400 people. We therefore spend a great deal of effort on making those 400 people feel that AST is *their* company. I think that the results have been very successful.

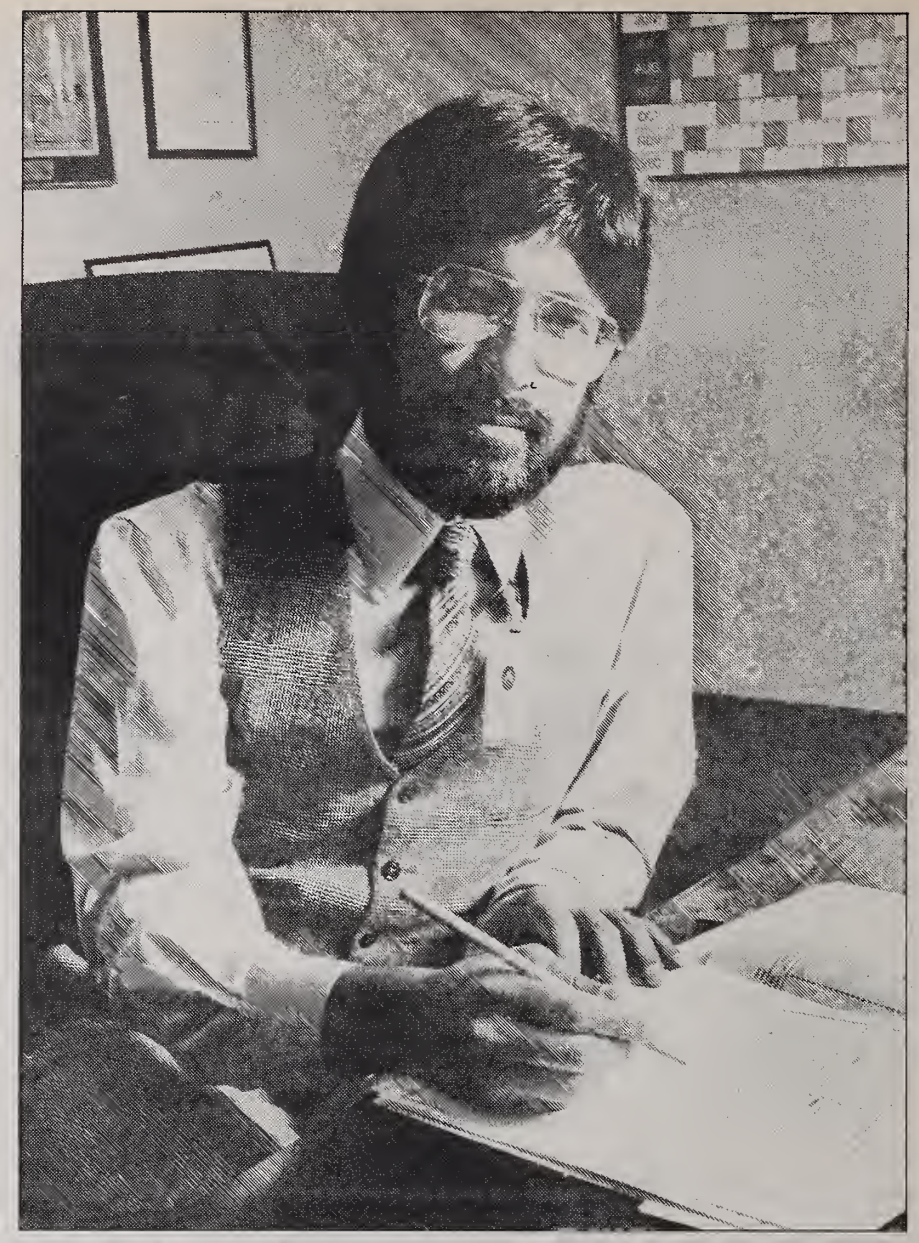
One area that we are especially happy about is our extremely low personnel turnover rate, which runs about 5% annually. The industry standard for manufacturing companies in our area runs about 33% every year.

Another point involves the area of productivity. Currently, the revenue-per-employee has reached as high as $346,000 per employee. This is extremely high as compared with the industry standard, which runs about $150,000 per employee. So the productivity on a per-person basis is running over twice that of industry norms. I think the high personnel retention rates, as well as the very high productivity rates, can be attributed to our attitude of our people working *with* us, not *for* us.

It sounds like you and your staff are really trying to take a "people" orientation towards your business.

Yes. For example, one of the reasons I think many small companies fail early in their lives is the attitude of their founders that they "know everything." Neither I nor either of the other founders profess to know "everything" about the business that we are in. On the contrary, this is why we now have eight vice-presidents completely running the day-to-day operations of the company.

Let's face it, the three of us who founded the company recognize our shortcomings, as well as our strengths. We may have had the advantage of having been here first, but there is no way that we could possibly understand all of the complexities of marketing, distribution theory, manufacturing, and all of the other things that are involved in a company the size of AST. You have to learn from, and have on your team, professionals in each of these areas. All of our vice-presidents are good examples of this. Each of them is a seasoned veteran with experience in a variety of major industries. They know how to deal with people and technical issues. In addition, we issue a challenge to all of them. That is, if you can do my job, you can have it, and I will move on to a more beneficial area of work for the company.



Safi Qureshey. Photo: Ann Summa

"Most people spend a third of their lives at work. People may be persuaded by money to join a company, but the money motive only lasts a few months. So we try to make the work environment as pleasant as possible."

So it sounds like you are trying to foster an entrepreneural spirit among your people...

Exactly. This is why we have started projects such as our independent business units (IBUs) to foster growth and innovation within the company. While I might not like an entire company of IBUs, I think our pilot trials with the Apple IBU have proven the concept to be extremely successful.

In addition, we try to encourage a feeling, throughout the company, that individual upward mobility is not only possible, but is happening! For example, if an engineer, or group of engineers, had a business or product idea, and the senior staff felt that it would be worthwhile to pursue, an IBU would be formed and that group allowed to spin off to produce their products in the most efficient way that *they* feel is appropriate.

Why do you think people like to work at AST?

My personal feelings are this. Most people spend a third of their lives at work. Sometimes, people may be persuaded by money to join a company, but really, the money motive only lasts a few months. After that, the working environment is the most important point in retaining that employee and keeping him satisfied. So in our case, we try to make the working environment as pleasant as possible.

If you look around, you will find a number of touches that help make this a more pleasant place to work. Most people have a PC at their workstation to help them in their daily operations. Smoking is banned except in specially set-aside smoking areas.

In addition, we do a number of things to make our people feel that they are an important part of the group here at AST. For example, on a monthly basis, we have a T-shirt day in which everyone in the company wears jeans and t-shirts. On this day each person chips in a dollar or two and all of us have pizza or some other lunch together over in the manufacturing building. This way everyone has an opportunity to get up and talk without any of the class distinctions that our daily dress might cause.

In addition, on a quarterly basis, we make a point of having some kind of major event. It may be a party, or a picnic, or just recently, a pancake breakfast where all of the managers and vice-presidents cooked for the rest of the employees. These kinds of things just create and help us maintain a really happy and open atmosphere.

Most companies simply don't go to all that trouble for their employees. Why have you gone to all this effort?

Perhaps the reason for doing all this is the fact that while the founders were working for other companies here in Orange County, we were resentful of the idea that you are "just a worker" and you don't try to go through the established ranks within a company. You do not talk peer-to-peer if you are not at the same level in the same department. I think that people should be able to express *their* ideas and concerns in any way or format that *they* feel is appropriate. This does not mean that there are no structures or policies, but they should form a guide to operate within, not walls to close people out.

Are you having fun?

I'm having a lot of fun!

How much?

Well, I hate Saturdays because there is nothing happening! That's how much. □

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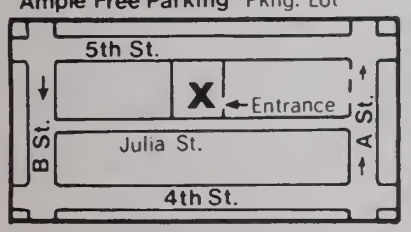

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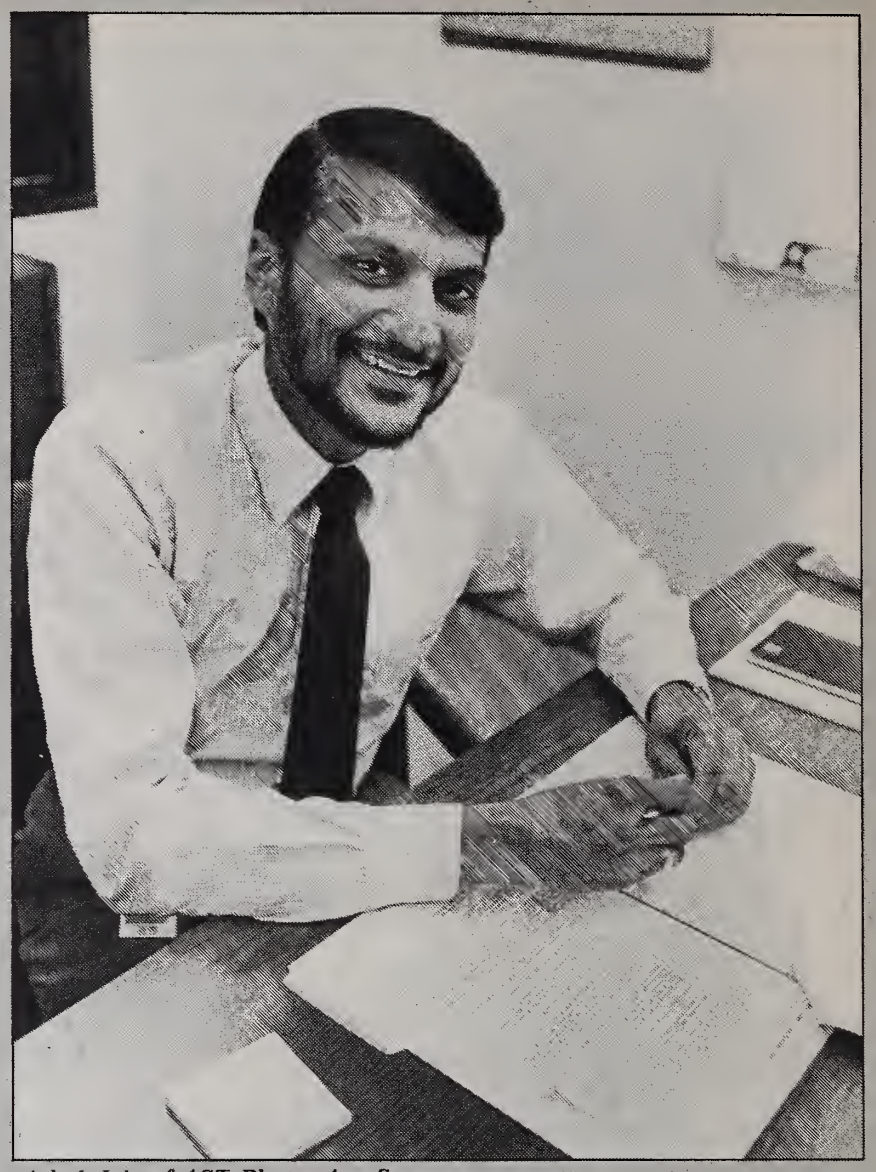

Ashok Jain of AST. Photo: Ann Summa

While AST Research is well known for their line of IBM PC/XT/AT expansion products, the fact is that their total product line is growing and widely diversified. It includes local area networks, data communications applications equipment, mass storage devices, and a growing line of expansion products for the Apple II and Macintosh XL/Lisa families of computers. To get a look at AST's Apple independent business unit (IBU), I stopped in during my visit to meet with its head, Ashok "Ash" Jain.

How did the Apple IBU get started?

Last year, AST's IBM PC market share had been growing at a fairly good rate and they were still looking to grow even further and keep their growth momentum going. One of the ways to do this was to expand into other market areas, the most logical of which seemed to be the Apple market. So, we came to the conclusion that it would be desirable to set up an IBU to pursue Apple products. Everybody in the company was extremely busy with IBM PC product activity, so, to try to retain the entrepreneural spirit of the company, they set me up as a little company-within-a-company.

So, as opposed to forming a new division or subsidiary, they formed an IBU which lives somewhere between a branch and a new division?

That's right. What we do in the IBU is conceive our own products, develop them ourselves, and market them ourselves. It was, if you will, like starting a company on my own, except that the corporate power and reputation of AST was backing me. As a result, our chances of success were very high when we started. Therefore, had we not succeeded, it would have been because the market for the products was not there, not a failure of cashflow or startup problems.

Did things go as you planned in the early days?

Well, actually, the IBU group is still rather small and in the growth stage, with only about ten people actually working in the IBU. The first person I hired was a secretary. She preceded me, in fact, into the IBU group by about a week. We immediately set up a data base of all of the companies and products that were then available for the Apple line of computer products. The reason for this is that unlike the IBM PC market, the Apple add-on market is not as well structured or mature. As a result, there were no directories or listings and we had to create a data base of our competitors just to do an initial market survey.

Within about one week, we had the material we required on our competition, their products and costs, what their sales profiles were like, and how their products were distributed. Having done our market survey and completed our research, we decided on a product and set off. We hired a engineer to design the product, and during this process we looked at subcomponent purchasing, marketing of the product, and a variety of other areas. The reason for this was that we wanted to have this first product ready to ship in just three months.

Is this three-month idea-to-ship cycle standard here at AST?

For a board-level product, yes. And in our case, we achieved that goal. Our first product was a multifunction card for the Apple IIe. It was very well received, the pricing was excellent, and it should be as successful as the SIXPAC in the coming year.

The Apple II series of computers is obviously a much more mature product than, say, the IBM PC. Can you look ahead and tell us what you see in its future?

In 1983, Apple had a number of what might be termed failures. They had the problems with the Apple IIe and its disk drive problems, and the Lisa had yet to really take hold in the corporate environment. That's when Apple changed as a company. John Scully came over from Pepsi-Cola and essentially changed Apple from a small company to an American corporation. This shows when you look at 1984. They introduced the Apple IIc and the Macintosh which were both "closed boxes" if you will. Then they tried to push the IIc into the market and it backfired on them. The demand for IIe's, or "open boxes," actually went up, and the IIc's were not selling. In fact, recently rumors had a order backlog of 100,000 units for the IIe, and an overstock of 100,000 units for the IIc, which explains their recent efforts to make deals on IIc systems. So, around the late summer of 1984 Apple realized the true potential of the IIe. The IIc had been pushed into the market and it *was* being accepted, but the sales power of the "open box" IIe was still there. Therefore, the IIe is going to be positioned as an expandable version of the IIc. For starters, Apple is going to make the IIe 100% compatible with the IIc. This will be accomplished through a modification in the firmware so the minor differences in the graphics, memory, I/O, and operating systems will be eliminated.

How does this affect AST's plans for their Apple products?

I think that this is very critical because we believe that the IIe is going to be very strong in 1985, and Apple may even have a new, higher performance version in 1986. It gives us a number of opportunities. First, it means that Apple recognizes the virtues of an expandable computer. This, therefore, gives expansion board companies like AST a marvelous opportunity. What we would like to do in that expansion market is to give it the same credibility that has been developing for the IBM PC add-on market. Until now, the Apple add-on market has been pretty much like the old Apple corporation. It was essentially a grass-roots movement with very little force or direction. It was really just one step above a "homebrew" if you will. What we plan to do is to provide a more general and comprehensive product line for the Apple II family. The multifunction card was just the first step. We will be providing peripherals and other board level products that Apple users need to meet their expansion requirements.

The computer market moves at such a rapid pace. How has AST been able to stay on top of the technological developments as they have happened?

First of all, we are in a secondary market. We don't design or market a primary product like Apple or IBM. We *support* primary products like the IBM PC or the Apple IIe. So for us to be able to project more than a year ahead would be foolish. This way, though, we can have very broad goals: what we would like to be, what size we want to be, etc.

But in terms of actual products, I don't think we can really project that far. We can focus on what technologies the primary producers *are* going to be utilizing in the future, and therefore, we can prime ourselves in anticipation of their introduction. This way, when they do emerge, we will have set up a window of opportunity in which we can act. For example, optical disk memory drives. We know that this technology is *going* to happen very soon. We are already geared up for it so that when the first optical disk products are announced, we should be ready to act.

In addition to the aforementioned products, AST is conducting R&D efforts into a large number of other areas. Among the most interesting is an effort to provide optional expansion capabilities to recently released line of AT&T personal computers. In addition, some of their newer products have made extensive use of the new 256K RAM chips, and they are looking forward to the first commercial uses of the new one-megabyte RAM chips. In general, AST tries to stay on a focused point on the leading edge of computer technology.

— John D. Gresham

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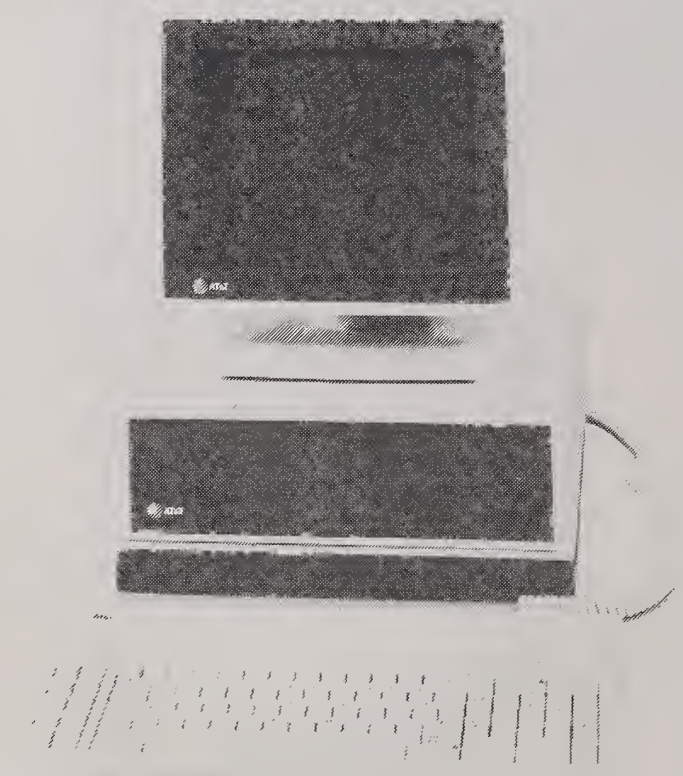

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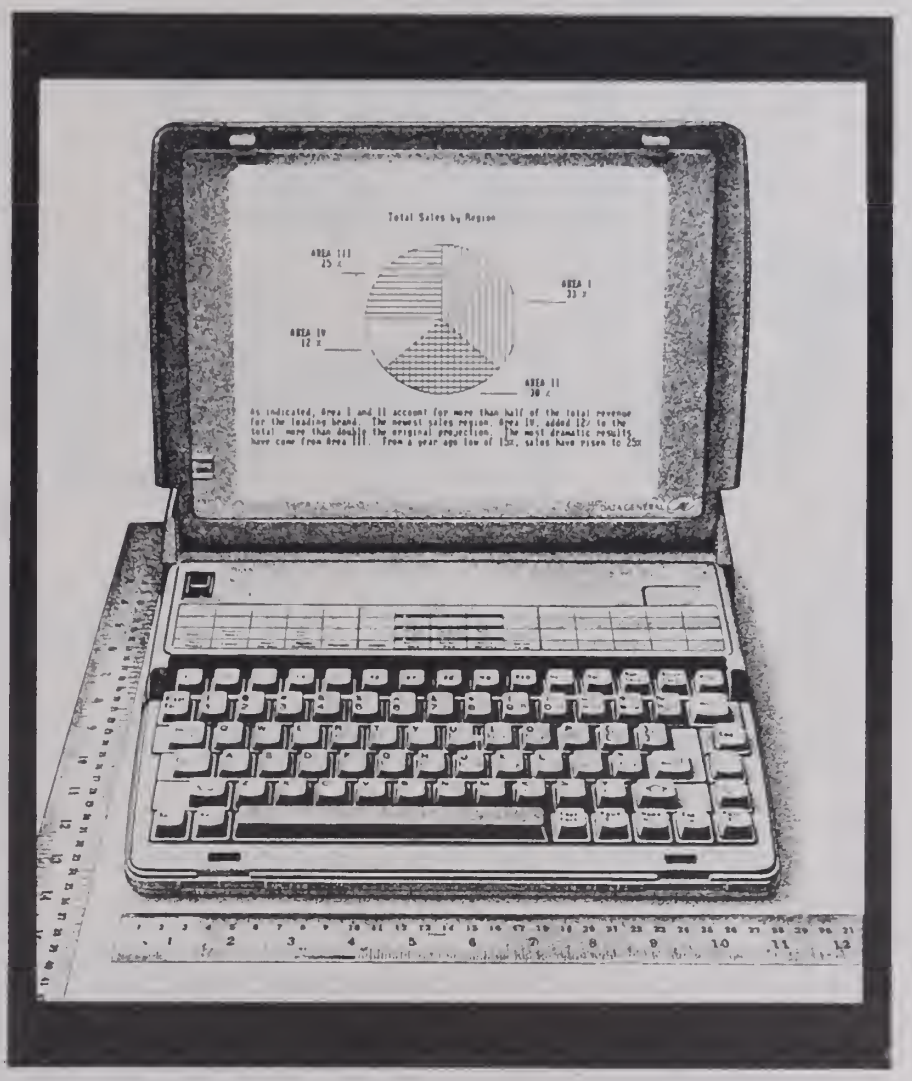

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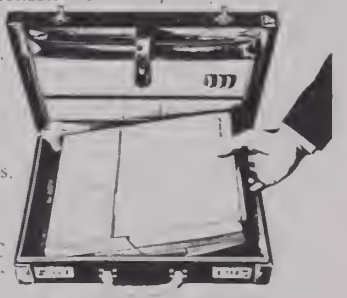

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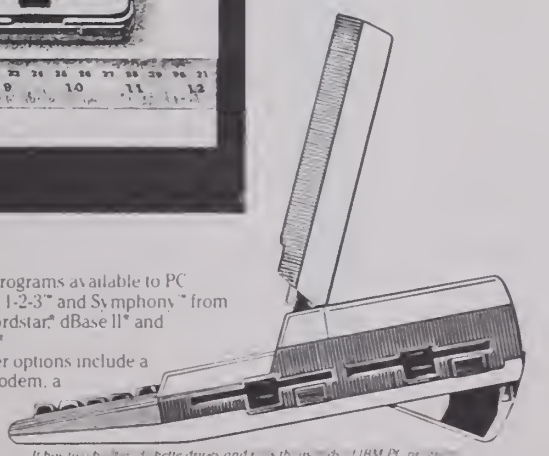

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Unix In The Real World

For the business with large computing needs and a budget less than the national debt, Unix offers an increasingly viable alternative.

By Carter George

DURING THE LAST TWO YEARS the Unix operating system has witnessed a tremendous surge in popularity. Once confined to laboratories, universities, and software development projects, Unix has emerged as the *de facto* standard operating system for supermicrocomputers, which are based on a single microprocessor but can support more than one user at a time. The increasing power of microprocessors has made this type of microcomputer more and more common: a recent survey showed that over 70 new multi-user microcomputers were introduced in 1984.

Unix offers the technical features that are necessary for a supermicrocomputer:

- Unix supports several users on one machine;
- With Unix, each user can run several processes at once;
- Users can communicate with one another on a Unix system;
- Unix includes a vast array of built-in tools to help eliminate the need for custom programming.

In the same way that MS-DOS became the dominant operating system for personal computers, Unix has become the operating system of choice in the multi-user microcomputer world.

One of the reasons for this is simply economic. A hardware manufacturer can buy the source code for Unix from AT&T and, without a great deal of cost, get it to run on new hardware. This means that the small manufacturers that populate the supermicrocomputer industry can avoid the risk and expense of developing a new operating system from scratch.

But what about the *users* of these powerful new micros? It is a matter of debate whether the economic benefit of hardware manufacturers is in the best interests of the people who will be using their computers, and Unix has had a reputation for being extremely complex and consequently hard to learn. In the labs and on college campuses that was no problem. In the hands of

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untrained small business people, however, awkwardness or intricacy can spell disaster.

One way to see how Unix works outside of the academic environment is to talk to someone who is using it in the real world.

American Brass and Iron (AB&I) is no typical business. AB&I is a large industrial foundry located in Oakland. A foundry is heavy industry, and heavy industry in America hasn't exactly been putting foreign manufacturers out of business lately. To stay alive, a foundry has to keep a tight and efficient rein on every aspect of its operation.

When AB&I decided to get a new computer system, it was not a decision that was taken lightly. John Serr, head of Accounting and Finance at AB&I, was brought in to help implement a foundry management information system. Serr was behind the decision to purchase a Unix-based system for AB&I, and he says that finding the right system was not an easy job.

The foundry makes hundreds of different cast metal products, ranging from huge pipes and fittings to home cookware. Many of the products are custom castings, designed specifically for the needs of a particular customer. The cost of each product is the result of dozens of factors. These include the amount of raw material used, the time spent on production, the casting process used, the amount of scrap left over, and the amount of grinding and finishing required.

"Our main concerns are cost accounting, job control, and job budgeting," explains Serr. "A foundry is a low margin industry, and there's no room for just guessing how much you should be charging for your product." To get an accurate figure for the cost of a single item, all of the factors mentioned above must be taken into account, often in a complex formula. This kind of project could have been tackled only by a large minicomputer not too long ago, but now AB&I is doing the job with a single supermicrocomputer.

At first, he says, he approached the attempt to design a foundry management information system with the idea of using networked PC's: "I was looking for a standard, something that wouldn't be obsolete by the time we got it set up. Microcomputer operating systems offer a standard, MS-DOS for example. It was obvious that a single PC wasn't going to do the job, but the idea of a network was appealing."

He continues, "Networks turned out to be just too slow. If you have a database of any substance, the disks that serve a local area network just aren't up to the task."

Large minicomputers were out too: they were too expensive, and none of them conforms to any standards. Once a company buys an HP 3000, a VAX with VMS, or an IBM machine, that company is committed to that one manufacturer for hardware, software, and service. And, says Serr, "I wanted a standard system, but did not want to be locked into the machines of one manufacturer. Most large computer companies go by the IBM book: make the customer dependent on you and they'll be stuck."

John Serr of AB&I. Photo: Pat Johnson

AB&I could not afford to buy a large corporate computer and then have it turn out to be wrong, a typical situation in which Unix provides the ideal solution. Since Unix is a "portable" operating system, there are literally hundreds of different manufacturers that make Unix-based equipment. (A portable operating system is one that can be ported to almost any kind of hardware. Unix has been ported to everything from the IBM PC to the world's most sophisticated computer, the Cray 2 supercomputer.)

Because of the portability of Unix, applications developed for one Unix system can usually be run on another Unix system with little difficulty, even one based on completely different hardware. For this reason, Unix offers the user a certain insulation from the computer manufacturer: if you are unhappy with your current machine, you can buy another, from another maker, without losing the applications you have developed or the work you have done. A slogan often associated with Unix is the New Hampshire state motto, "Live Free or Die."

Unix offered AB&I the solution it was looking for: a standard operating system and a wide selection of hardware vendors to choose from. They ended up picking a single Zilog Model 32 supermicrocomputer. (With 20 MB of RAM, a 168 MB hard disk, tape backup and the ability to support 32 users, the Zilog is perhaps the fastest, most powerful of all of the current supermicrocomputers.)

The logic behind the decision is sound business. But what about the traditional complaints about Unix? The one, for instance, that says Unix is hard to learn.

"Well, that is a valid complaint," says Serr, a newcomer to Unix when AB&I made the final decision to go with the Zilog and Unix. "Unix *is* harder to learn than MS-DOS or CP/M. On the other hand, it's not really a problem for us. The people who will be using the system on a daily basis will hardly ever see Unix. They'll be using the database package that we are using for our cost accounting application, and it is quite friendly. For those of us who *do* use it, there is just so much more capability once you learn your way around."

The second major complaint about Unix has been that there is no serious business software available for it. Serr did not find this to be a problem for AB&I at all. Of course, he also didn't expect to walk into Computerland and find a Unix-based diskette with an all-in-one foundry management information system on it. He did, however, find *Informix*. *Informix* is a very powerful, fully relational database that runs on most Unix machines. *Informix* provides most of the serious features that could be expected of any business database. The results have been good, says Serr: "I can't believe how good the database approach is compared to writing and compiling COBOL code in the old days. I can easily make changes in the way things are set up in just a matter of seconds."

The AB&I Zilog is currently working on problems like figuring out how many molds should be stamped per hour to maximize cost efficiency, which is not as easy as it looks. At first glance, one might think, the more the better. The computer, however, is looking into whether making molds faster means more defects down the line, and whether those defects become scrap or whether they can be repaired by more grinding time in the finishing stages of production.

To figure this out, the computer must keep track of every piece being processed in the foundry at every stage of production. It must compile statistics on how many successful molds are produced in an hour and relate that information to the ultimate cost per piece of the castings. This is just one of several simultaneous aspects of foundry operation that the system will monitor.

To develop such an application from scratch in a traditional programming language would take several programmers several months. The AB&I system *has* involved a lot of custom software design work, but most of it has already been done by Serr and one outside consultant. With the facilities of Unix and *Informix*, AB&I is using a microcomputer to do the job today.

Unix is probably not for everyone. For the business with large computing needs and a budget less than the national debt, though, Unix offers an increasingly viable alternative. □

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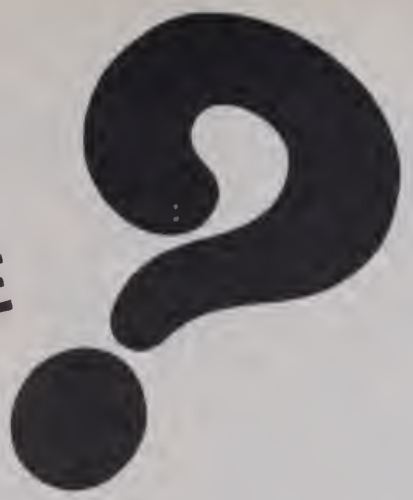

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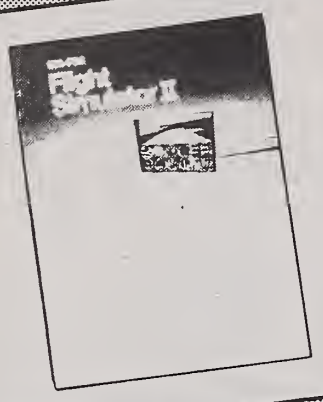

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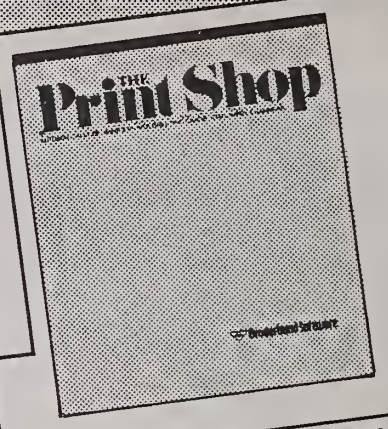

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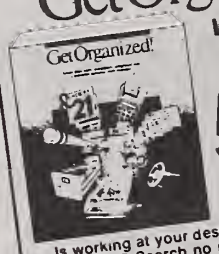

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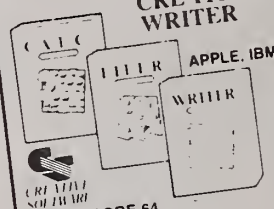

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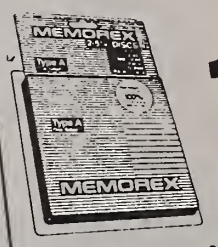

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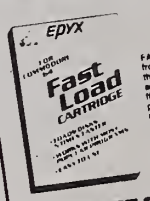

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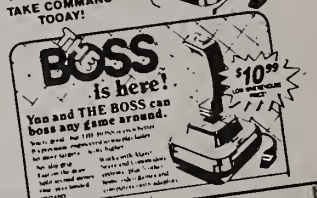

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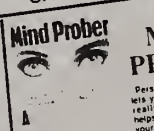

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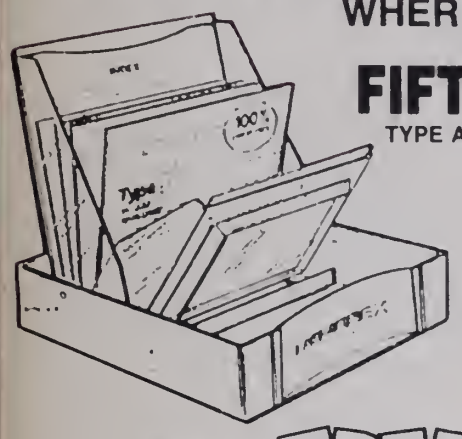

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BASIS: Bringing Unix To Everyman

Patricia Shanks of BASIS. Photo: Pat Johnson

For real-world evidence that Unix is both versatile in its applications and accessible to users at all stages of computer literacy, stop by the Berkeley office of BASIS. An acronym for Bay Area Shared Interactive Systems, Inc., BASIS is in the business of bringing Unix to the commercial sector; its services include hardware and software sales, consulting, user support and training. What makes BASIS relatively unique is its timesharing service, which is integrally related to its other operations. At any time during the business day (or 24 hours a day by phone), many users are working on wildly divergent projects: one may be writing a book, another generating labels from a mailing list, yet another engaged in sophisticated statistical analysis, while somebody else is investigating scientific esoterica as his neighbor is doing custom programming — all on the same system at the same time.

The BASIS timesharing bureau was the first phase of the company's operations, and its continued existence and prosperity are, to a significant degree, due to the particular advantages of the Unix operating system. When BASIS opened its doors in 1981, timesharing services were generally based on mainframe computers, very costly, and necessarily geared to high-volume users. They were also going out of business in droves, because it was nearly impossible to run them cost-effectively. Unix changed all that.

BASIS president and co-founder Patricia Shanks had had occasion to work with Unix since 1976 on the UC Berkeley campus and had first-hand experience of its capabilities. In starting up BASIS, she says, "It was our notion that Unix as an operating system made a whole lot of things possible fairly cheaply and that a timesharing service bureau could bring Unix to the general population, the commercial sector, at very reasonable prices.

"The main advantages are its multi-user, multi-tasking abilities; the system is smart enough that it can handle more than one task at a time, by swapping things back and forth as it runs out of resources, so you can have many users on the system at the same time, doing *insanely* different things." Not only that, several users can work on the same file at the same time without getting in each other's way.

The timesharing service attracts a broad spectrum of clients, as to both needs and competency levels. Some clients are what Shanks terms "transitional" — either those with a specific, short-term task that BASIS has the resources to accomplish efficiently, or those who want to learn more about the Unix system. "A noticeable minority of our clients," she explains, "are people who are programmers in other languages and want to learn more about the Unix environment, or they want to learn to program in C [the language in which most of Unix is written] and don't have access to a Unix-based system." Some of the latter variety of clients have never set foot in the BASIS offices — some of them live on the East Coast and access the system exclusively by remote dial-up.

Other clients are not technically ready for their own computer and, she says, "want the kind of handholding that we provide." These clients tend to have a particular application which they know a computer can accomplish efficiently, but they don't have the time or the inclination to learn to operate and administer their own system. In this situation, BASIS support personnel help clients define their needs, create an appropriate database, load it into the system and train the client how to use it and enter data. A veritable computer illiterate can then take advantage of the system's capabilities for a particular application without having to acquire any more sophisticated knowledge. And if a client has a specific application but also wants to learn about building databases, BASIS offers numerous books and periodicals on a variety of subjects and has a knowledgeable staff to answer questions.

The timesharing service also accommodates clients who intend to purchase or lease their own systems eventually but need a relatively low-cost, low-risk opportunity to explore the possibilities of Unix. And last but not least, BASIS also serves personal computer owners with an occasional need for more resources than their own machines can provide: more memory and disk space, for instance, or access to a particular application-software package.

Nowadays the would-be Unix user is inundated with hardware and software options. In 1981, the Unix revolution was barely off the drawing board, but the BASIS founders could see that the system, which renders a microcomputer capable of tasks previously restricted to minis and mainframes, had enormous commercial potential. "We all knew," says Shanks, "that the technical folks down in the Silicon Valley were starting to get really interested in Unix as an operating system, and that there were many of them getting ready to manufacture multi-user microcomputers that would be relatively inexpensive — several people could be on a system for less than $2000 a person. We also knew that there would be a lot of multi-user microcomputer hardware and software available eventually."

As Unix-based hardware and software became available, the timesharing service proved an excellent testing ground. The daily barrage of assorted problems and diverse applications helped BASIS personnel in selecting the most helpful products for various needs; the constant trial-by-fire of new offerings in the timesharing environment underlies BASIS' sales and consulting operations.

"We don't sell anything that we don't use ourselves," says Shanks. "We only put on line products that we use, and we only sell products that we use within the timesharing environment. All this keeps us very honest, and attached to a sense of what requirements are in the real world." (BASIS Computing Resource Center, 1700 Shattuck Ave., Berkeley, CA 94709. (415) 841-1800).

— Mary Eisenhart

Jina Bacarr. Photo: Don Hamilton

THAT CERTAIN 'BIT' OF SEDUCTION

By Jina Bacarr

He wanted me and I knew it. As his eyes lingered on the sheer butterfly lace of my pale violet stockings I felt the heat of desire sweep over me. I pushed my wavy blonde hair lazily over my bare shoulder, admonishing his silent suggestion with a pink pout on my full lips. "No...," I whispered, trembling, but my blue eyes begged him to ignore my plea. Suddenly, he wrapped his arms around me and I thrilled to the pressure of his strong hands on my waist as he squeezed...

"...an overturned semi causing quite a problem in the Cahuenga Pass this morning..." droned the traffic reporter on my radio, invading my colorful dream with his blank reality.

My dream lover wasn't the only thing gone with the dawn. So was my long blonde mane and blue eyes, I noted, running my hands through my straight red hair while I looked into the mirror. My round green eyes surrounded by jagged red streaks stared back at me like a traffic signal run amuck. So much for Sleeping Beauty, I decided. I was now Awake Ugly—or so I felt.

As I reached for my usual array of make-up colors, I wondered if a ripe shade of coral would go with that new teal eye shadow I just bought. However, there would be no time to experiment this morning. I would be late for my interview if I didn't make tracks. I slam dunked the coral lipstick back into my basket of forgotten makeup with more colors than a rainbow.

But hold onto your white horses! I thought. This was my day when dreams *did* come true. Today I was going to interview ELIZABETH, the lady who not only knows her mind, but her circuits as well. From now on there would be no need to apply makeup as if it were a TV dinner—frozen, boring, and sometimes tasteless. In fact, taking my make-up questions to ELIZABETH was the closest thing to dreaming up a new me.

You see, ELIZABETH is a computer. She's pink and white, and as elegant as any queen by the same name. *And* she knows how to make the most of woman's premiere seduction tool: color! Ever since the first cave woman discovered that just the right shade of *terra firma* on her Cro-Magnon cheekbones attracted more men to her cave than she could handle, women have been in love with color. "But which colors are right for me?" is the eternal cry. Well, cry no more: ELIZABETH is here.

With the help of her very human (and very beautiful) promotional representative, Bobbie Pedersen, ELIZABETH can also analyze skin tone, select cosmetic colors, and make suggestions as to what preparations a woman can use to maximize her new "looks."

Resplendent in my favorite colors—Savage Purple Jungle lipstick and Flowering Magenta blush (I hadn't been able to part with them since my high school prom), I left for my interview. Miss Pedersen and ELIZABETH were waiting for me when I arrived at the Bullocks' South Coast Plaza store in Costa Mesa. The minute I saw the pulsating high tech pink and white ELIZABETH center, I felt like a sultan's wife about to be pampered and powdered in ultimate luxury. And I was right.

ELIZABETH is actually the brain lady of Dr. Tom Cook at Elizabeth Arden Divison on the East Coast, and Dr. Cella, head of the Research Center. They developed ELIZABETH to be able to store information about each customer in her memory bank, including all colors and "looks" done on a given day. Then if three months later the customer needs an update on her appearance (new job, wedding, etc.), ELIZABETH remembers what was right—and what didn't work for the lady. Why, it's like having a personal consultant on call! ELIZABETH is proof that the high tech age of computers is not restricted to the business or entertainment worlds. While the man of the house structures his sales meetings on his computer, and the kids blast each other in and out of the Universe on theirs, the '80s woman is using her computer to enhance her appearance and her well-being.

Well, now that I knew all about ELIZABETH, it was time she knew about *me*! After having my face "frozen" by the TV camera, I sat down with Bobbie at the computer to meet her. Everyone wears a smile at Elizabeth Arden—even ELIZABETH! The bright screen computer twinkles with a diamond cursor that allows the make-up consultant to remove makeup and apply at will any color of shadow or contour listed on the screen and remove it just as quickly! Where you once just stared at a screen to balance your checking account, you can now make deposits and withdrawals on your face! Instead of a typewriter keyboard, there is a smooth, blank "canvas" board with a black stylus used to do the actual drawing.

"There you are!" Bobbie said as my face appeared on the screen. I cringed. My make-up had looked fine in my mirror only an hour ago; now it looked faded and all wrong—I was certainly not the fairest of them all.

"Help me, ELIZABETH!" I cried, and Bobbie proceeded to give me a face Snow White would envy. During the next half hour, Bobbie gave me three entirely different looks, ranging from a more finished version of my favorite hot pink make-up to a saucy coral to an ultra-dramatic bronze red. First, she removed all my makeup on my screen image with her stylus, then proceeded to draw in fine eyebrows in a soft sable brown. She next applied under-the-eye concealer, base, eye makeup and lipstick, all with her computerized stylus! When she finished, she divided the screen into four separate screens, each with my frozen image. I was now able to compare my three "new" looks with the original makeup I started with. What a difference a change in color makes! What would usually take at least a couple of hours or more had all transpired in under thirty minutes. Besides, I did not have to remove my makeup *and* I could watch *how* Bobbie applied the colors to my own face at the same time.

I could hardly wait to add the new colors to my rainbow basket, but this time with one difference. Now I knew *which* colors worked best for me. No more guessing or wasting money on products I would never use. ELIZABETH has shown me that I can be beautiful and still stay on my budget.

Bobbie handed me my printout and greeted the next lucky lady (all makeovers are by appointment). Cathy Lee Vincent, the Arden marketing coordinator for Southern California, then showed me the different colors listed, and explained that any Elizabeth Arden makeup purchases are applicable to the $25 fee.

By this time ELIZABETH and I were old friends and I hated to see her—and her very personable Bobbie Pedersen—leave. But ELIZABETH and Bobbie are very busy traveling the country, making every woman's dreams a reality.

As I picked out my favorite colors from my printout sheet, I felt someone watching me. I looked up into the crowd of people gathered around and locked eyes with a tall, dark-haired stranger who somehow seemed familiar. He smiled. I followed his gaze down to my lace stockings. Then I knew...

When I looked up, he was gone. But I know he'll return again. Soon. Dreams have a way of doing that, you know. □

CHEAP RAZOR BLADES

Low Cost Computer Game Software

It is said that a young marketing executive once asked the CEO of Gillette Corporation why Gillette sold its razors at such a low price. The CEO is reported to have replied that the money was not to be made on the razors, but on the many razor blades that would be made to fill those razors. The same strategy can be seen at work in the computer world. Today we find that while computers are being sold at a knockdown price, the cost of software continues to go up. In the jargon of the razor business, the razors are cheap, but the blades are killing us.

Nowhere is this more true than in the area of computer game software. If you are a parent, you know the story. The kids have become bored with the last five $30.00 pieces of computer software that you brought home. They want more. What are you to do? Recently, I came across some possible solutions that are worth some attention. On top of that, they represent two different, and innovative, ideas to solve this virtually endless drain on your already thin pocketbook.

The first is a new line of high quality arcade-style games by Mastertronic. The quality of the graphics and sound is excellent, with the plot lines and game type based on some excellent examples and titles: *Chiller*, a *Donkey Kong* style game based on a Michael Jackson-like character; *1985*; *The Day After*, which resembles a *Lunar Lander* style game; and the real winner of the group, *Monty Python and the Holy Grail*, in which our favorite bunch of medieval limeys goes hunting for the sacred cup. The real surprise is that each title sells for under $10.00. With five titles released and more on the way, these games from Mastertronic should sell very well. All three games are currently available for the Commodore 64.

On the other end of the spectrum is a software package that reminds me of the days my parents would make up stories and build toys for me when I was a child. The *Adventure Construction Set* from Electronic Arts is just what it says, a kit for a parent (or very imaginative child) to develop adventure games for home use. Developed by Stuart Smith, this package allows just about anyone to develop an adventure role-playing game in just about any setting or time frame one could imagine. From a jungle adventure with Indiana Jones to a space opera like *Star Wars*, this package is limited only by the limits of your mind. In fact, it's almost too good to just hand over to the kids. I spent the better part of an entire afternoon producing and playing just one part of a single game. The combinations and adventures are virtually endless. The graphics and sound are excellent and at almost any price, this package would be a bargain.

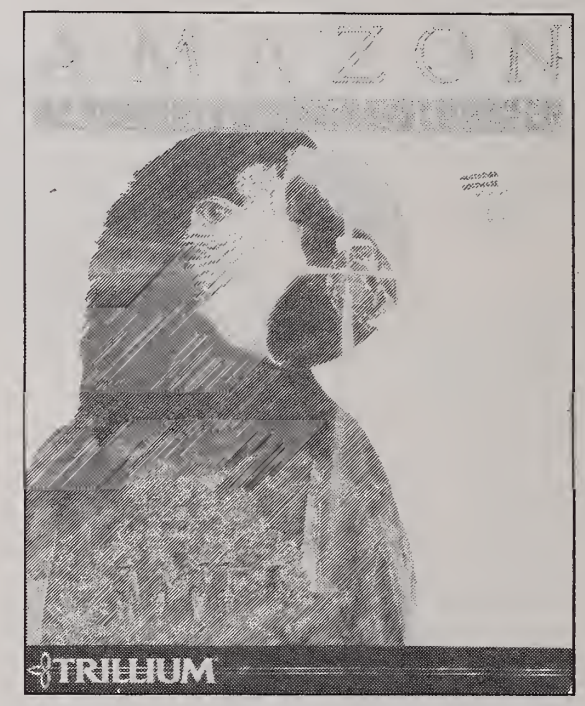
The software package described above are just some of the ways you can economize on your home software costs. The producers of these packages deserve a great deal of thanks from the bottom of our collective pocketbooks.

—John Gresham

Amazon

Created by: Michael Crichton
Programming by: Stephen Warady
Published by: Trillium Corp.
For: Apple II family (64K)

Interactive adventure software is not for everyone. The enjoyment of this pastime requires considerable patience and a real delight in solving puzzles. An interactive adventure is like a game, but it is also rather like a book. The plot gradually unfolds, driven by the commands you enter. Mostly, you get killed, usually in gruesome ways. This is one of the conventions of the medium, so the squeamish or non-violent might be advised to avoid this sort of computer entertainment.



Trillium, a new company in Cambridge, Mass., has an interesting concept for the future of adventure gaming software. Their titles are "created" by recognized authors in the science fiction and fantasy field. The starting lineup includes some great names such as Ray Bradbury, Arthur C. Clarke and Michael Crichton (author of *The Andromeda Strain* and *Congo*). *Amazon* has a plot that might be called "Indiana Jones meets Romancing the Stone with his Portable Computer'.

Amazon consists of a colorful cardboard folder, two 5¼" disks (using all four sides), a full-color map (mostly blank jungle) and a packet of instructions, notes and clippings. Its basic scenario casts the player as a government agent sent in search of a legendary emerald mine in the Amazon jungle, and also entrusted with the task of helping a previous expedition which is being gradually decimated.

Read *everything* in the notes before you start — you will need all the information you can get to survive in this adventure! One of the most useful items is a complete vocabulary of the nouns and verbs that are recognized by the program. This saves the player endless hours of guessing. Another feature common in adventure games is a short encrypted list of hints and tricks (the only problem with this is that it "gives away" some notions of what to expect downstream).

You will need another blank disk to save adventure situations. You can save the status of the game at up to ten different points. A good habit is to save your situation at any point when death seems imminent. It is then very simple to "restore" the game to the previous state, and try bashing away at another direction, option or course of action.

When the program wants you to respond, it provides a prompt — the) symbol. Otherwise, all that needs to be done is to read the text, look at the pictures, and *pay attention*! This is not a "beer and pretzels" type of game that allows you to let your mind wander while the computer puts things up on the screen in front of you. Small things like the orientation of graphics and small hints from the computer text and game notes are essential to your survival.

This is not to say that everything happens with the pace of a Lucas/Spielberg epic movie thriller. There are long pauses while graphics and situations are being read from the disk drives. This should be familiar to all owners of Apple II computers, who should be used to the glacial pace of the processor and graphics on this old 8-bit system. Nevertheless, some spectacular visual and sound effects are generated by the program. Within the confines of Apple system architecture, these graphics are just short of actual animation both in their detail and effect on play. For example, on one screen encountered early in play, we see a 360 degree pan around the burning and devastated remains of an earlier expedition.

It should be noted that some graphics are so horrible that this software might have a "PG-13" rating were this a movie, so parents should possibly beware of use by younger children. The game tends to run the player from one "scene" to another with the player either "making it" to the next screen, or flunking out, by death or mission failure.

To help the player recover from these, and other assorted pitfalls, the system allows your progress to be "saved," and allows you to "freeze" a spot that can be returned to if you should "die." As a companion and advisor, the plot provides Paco, a magnificent green parrot. He is unpredictable; sometimes he offers lifesaving advice or assistance, sometimes he just squawks or makes jokes. In addition, included in your equipment is a computer (which really functions as a radio) with a satellite link back to headquarters in Washington, D.C. This handy device can provide you with such useful information as your position, escape information, or the latest situation data on your area of action. On the other hand it can be a fount of useless information: on one occasion, our desperate plea for help was answered with the halftime score of the Dallas Cowboys and the Washington Redskins (42-0 Cowboys).

In many cases, apparent dead ends have trick escapes that depend heavily on the use of THE proper word(s) or use of an item(s). For example, a midnight escape through a camp of sleeping, drunken soldiers seemed impossible — whichever direction we took, we stumbled over troops who woke up and machine-gunned us. Finally we took a closer look at a pair of goggles in our pack, which turned out to be a night-vision device that allowed us to find the way out.

Unlike some games, a complex adventure like *Amazon* is not something that you can expect to sit down and solve in a single sitting. The intricate puzzles and the author's imagination are something to be savored and returned to repeatedly over many days or weeks (years?). You know it's time to stop when: the situation seems hopeless, there is no way out, and you feel like punching your monitor out. Avoid this impulse. Good color monitors are costly (please use color for this one, it is beautiful), and explanations at the emergency room can be embarrassing. We would highly recommend *Amazon* to fans of Michael Crichton and experienced players of interactive adventure games or fantasy role playing.

P.S. — We are still lost in the jungles of South America, but we have not lost hope of finding the emerald city....

— John Gresham and Mike Markowitz

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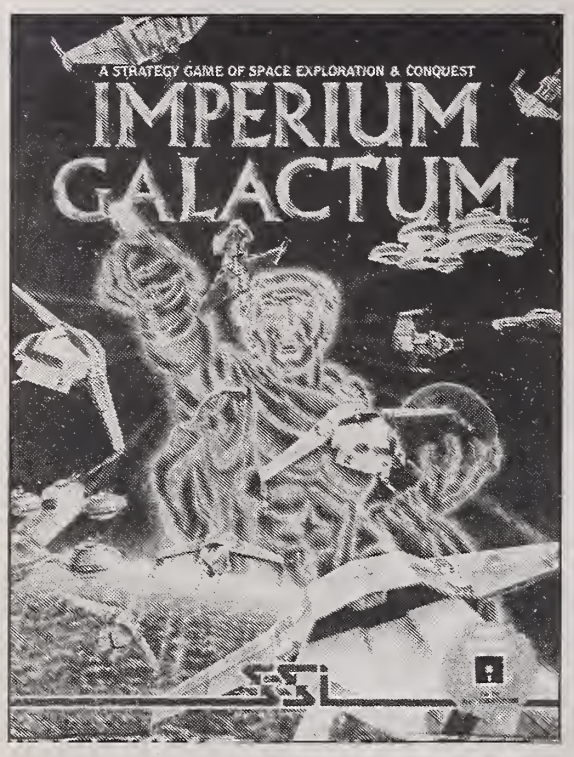


Imperium Galactum

Publisher: SSI
Author: Paul Murray
For: Apple and Atari

You have been living on the main planet in the Sol Star System for 20 years now (simulated time). You built a space fleet of about 20 star ships of various types and have about 30 transports. The secondary planet in your system was independently owned and was somewhat hostile to you, so in turn, you loaded your armies onto your transports and proceeded to make this planet your own. You feel quite confident now.

Economically, your have plenty of resources to develop; you just need more people. In order to increase your population, though, you have to find a planet capable of growing more food.

Logically, you proceed to send out scout ships to locate such a planet. In the meantime, you have been negotiating with your three computer opponents. After some fast talking, they are undecided where their fidelity really lies.

Your scout ships have located a planet which has abundant atmosphere to grow food — the planet Chronos. But you soon discover you are not alone as you detect a force from your computer enemy to the east.

Immediately you dispatch your force, complete with transports and armies, to take control of the Chronos star system. Upon arrival, your force is completely destroyed by the enemy. In the meantime, your computer enemy to the south (so much for negotiating) invades your home system, which is no longer protected, and lays it to waste.

Such was my first experience playing *Imperium Galactum*.

Now to the game itself. *Imperium* is certainly a unique game in many ways. It's similar in structure to *M.U.L.E.* and *Carrier Force*, but with some unique ideas: namely the ability to negotiate and deal with the computer players while playing solitaire. You and a friend can also play along with two computer players. This opens up some rather fun possibilities, as becoming adept at negotiating adds to the enjoyment of the game. If you enjoy interaction with your computer, this is your game.

The game is set up in various phases with different menus to get your ideas into action. Game play is very smooth with a save game option. Input is made by means of the keyboard. Graphics are similar to *Carrier Force*. The game depicts the map area of the 50 different star systems as well as the different task forces. A close-up view is also available, so the graphics are more than adequate.

Documentation is also very good. You may have to re-read it a few times, especially the part on economics which is vitally important in the overall strategy. Basically though, it's well written, with quick reference charts on the back page.

In playing the game, you move rapidly through the phases of building ships, developing your resources, etc., but your enemies are constructing just as quickly (especially the computer). You are not the super power in the galaxy by any means. You have to earn whatever you get.

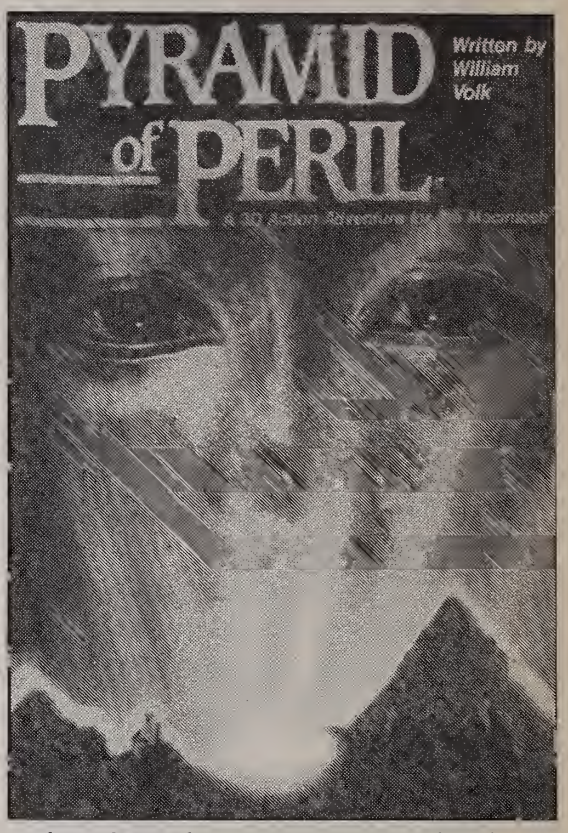
Play is very smooth except in one area. Conquering another planet takes careful forethought. This type of maneuver becomes easier with practice so it's not a serious drawback.

You can redesign the starships to fit your fancy. For example, you may want to redesign a light cruiser to do strictly planetary bombardment. This will come in handy when you start trying to knock out planetary defenses.

To win the game (and it will take some time), you must be patient. If you put together a fleet and go out looking for a fight, you are going to get "purged." Rather, take your time, build up your fleet, increase your tech level, increase your industrial output, and above all, take seriously the art of negotiating. One other tip. Save the game frequently. This way, if you do get into trouble, you can go back and correct your mistake without starting from year 0.

Overall, this game is challenging. It provides for strategy, good action, and good graphics to depict the overall view of the game. If you enjoy a game that gives plenty of challenge with good player interaction, then it's well worth the price tag. On a scale of 1 to 10, I rate *Imperium Galactum* a definite 9.

— Eric Johnston



The Pyramid of Peril

Designed by: William Volk
Published by: Aegis Development, Inc.
For: Macintosh
Suggested Retail: $49.95

OK, Indiana, 'tis time to follow the advice of your old archeology professor and "go forward into the past, to bravely go where no man has gone before, recently. . . ". Unfortunately you fell asleep before you heard the end of the sentence, which sounded suspiciously like "and survived."

And so here you are, at the beginning of a trek into the bowels of a six-level pyramid, armed with a walking stick, a bag, and the same brain that thought that this was a good idea in the first place. You are looking for treasure and the famed Idol of the Pyramid, a magic relic from days gone by when necromancers were necromancers and hobgoblins knew their place.

You are about to find that society isn't what it used to be. . . .

Things may seem easy at first. There are all sorts of baubles to be had, and the local vermin can be disposed of with a quick whack from your staff. Things start getting stranger in short order; the beasties start getting bigger and more vicious, you begin to find the skulls of, and messages from, previous pyramid explorers, your strength begins to wane as you jump from level to level, room to room. . . .

There is some help though. You can see everything in front of you in fabulous 3-D. The map of everywhere that you've been is visible at all times, and can be used to show entry and exit points to other levels. Pitchers and flasks of rejuvenating fluids can be found to restore strength to your mouse-moving members and give you the courage to go on. If you live long enough, you can progress from carrying a walking stick to a dagger and then to a sword, the ultimate tool for massacring monsters and local bugaboos.

Best of all, there is the wizardly countenance of William Volk hovering over the screen in a sympathetic and spiritual sense.

He is the architect of the pyramid, the man of machines who quit a rather lucrative job to create the *Pyramid of Peril* out of a lump of plastic named Mac and a long, long string of arcane incantations that he describes as Micromotion MasterFORTH. He has gone to great lengths to lose himself in his work, creating an environment that has the sophistication of a complex adventure and is yet totally mouse-accessible. The pyramid redesigns itself every time you enter it, and even when you save your current position (and the maps of where you've been) there is no telling what may lurk around the next unexplored corner.

There are elements of strategy, quick reflexes, and multi-dimensional thinking involved in solving the secret of the Pyramid. At the same time, no prior computer experience is necessary to become involved in the adventure — the Pyramid is a fantastically easy introduction to lumps of plastic named Mac. This is not to say that the Pyramid is easy; in the words of its creator, "I designed the damn thing and I've only managed to beat it once."

Wizards these days are not known for their adroit turn of phrase. Their craft, particularly in the Macintosh arena, involves drawing the uninitiated into their sphere of influence. Volk and his compatriots at the Aegis Development Corporation may well be on their way to creating an alternative genre of electronic environments for those allergic to television network programming, arcade games and long-winded text adventures.

Let's hope so.

Editorial caveat: *Pyramid* was rush released for the recent *MacWorld* Expo, and Aegis had not yet installed a "save" function into the game. Please be sure to fill out your warranty card and send it in; if you lack a "save" function, Aegis will be happy to send you a new disk free of charge. (Aegis Development, Inc., 2210 Wilshire Blvd., Suite 277, Santa Monica, CA 90403.)

— Ken Goehner

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Transylvania

Designed by: Antonio Antiochia
Published by: Penguin Software, Inc.
For: Apple
Minimum Memory: 48K
Age Group: 8+
List Price: $34.95

It's no wonder that *Transylvania* received the Electronic Games Magazine Award for outstanding visual effects. The color graphics are well detailed, pleasant to look at, and add to the adventure and solution of the game. Two versions of the game are provided on one diskette. Side One is a high-resolution version for 48K Apples, while Side Two is a double-resolution version for 128K Apples. Other than the difference in resolution, the double-resolution version has two additional graphics scenes at the conclusion of the game. In all other respects, the versions have identical scenes, clues, commands, and game play.

You begin the adventure at a dirty tree stump near the edge of a forest. The time is midnight. You must find the Princess Sabrina, rescue her from confinement, and return her to her father the King. You must act quickly and ration your moves, as each turn uses valuable time. If time runs out, poor Sabrina will become lifeless in a pool of her own blood. Fortunately, Sabrina will be reincarnated each time you restart the game, and you can use your past experience in Transylvania to make your new efforts more productive.

As you travel through the forest, you will have the opportunity to explore an old house, a cemetery, a clay hut, a castle, a broken wagon, and other items of interest. (It's a good idea to create a map during your journey, as you will revisit areas either willingly or not.) Along the way you will discover clues and items which will lead to other clues or ward off your deadly foes. You will discover hidden chambers and caverns, gaze into mystical orbs, and observe astronomical events. You will learn the secrets of the enchanted garden and of the creatures of the forest. Some of your exploits will take you high above Transylvania while others will bring you deep below its forest.

Your two deadly foes are Dracula and the Werewolf. Those of you who are familiar with these classic villains will have no trouble defending yourselves. A trip to the library, taking in the appropriate late night movies, or help from a friend may help the rest of you if you are not successful through experimentation.

The major portion of each screen is composed of a graphic display. A few lines of text are displayed at the bottom of the screen indicating your present location, which items are in sight, the commands you enter, and the response to your commands. You do have the option at any time during the game to switch between the graphics screen and a full text screen, which is useful if you need to review your last few commands. The game has a large dictionary of verbs and nouns for commands. Commands consist of one or two words, but usually require two words consisting of a verb followed by a noun. The words can be abbreviated to their first five letters and in certain situations they may be abbreviated to just one letter. Two very useful commands are "INSPECT" and "INVENTORY". Use them frequently. You can request HELP during the game, but you will find it always gives the same response. You can SAVE your game at any time and restart the game where you left off, which allows you to experiment with risky commands or leave the game to get some sleep.

Both versions of *Transylvania* were reviewed on an Apple IIc. It is a single player game, which is not to say that several players could not contribute to the solution of the game. The documentation adequately describes the game without being complicated or giving unnecessary clues. Again, the color graphics are superb with at least three dozen different scenes, many of which will or can be modified. The game play is adventurous and logical without being too simple to maintain interest or complex enough to cause frustration. The game is an excellent addition to any software collection and well worth the investment.

— Bruce F. Cannelongo

The Serpent's Star

Published by: Broderbund
For: Commodore

The Serpent's Star is the latest entry in the growing field of interactive fiction. Produced by Broderbund, *The Serpent's Star* is an entertaining journey that bears more than a slight resemblance to the plot of *Indiana Jones and the Temple of Doom*. The user plays the role of Mac Steel, an archaeologist and seeker of lost treasures. His eventual goal is to find a sacred gem called the Serpent's Star, which, if found, is supposed to give its possessor the gift of immortality. The story starts with Mac about to pilfer ten of the required thirteen sacred scrolls from the government of Tibet. Mac must acquire all thirteen scrolls and outwit his opponent, Francisco Roboff, not to mention the local natives, to get to the gem.

The Serpent's Star is one of the better examples of interactive fiction I've seen recently. Based upon a series of excellent graphics, it's simple to learn and fun to play. One of the more attractive features is the ability to "save" the adventure at various points so that if Mac "dies," the adventure can be regenerated to allow the player to attempt some other possible course of action. This particular software series appears to be a little more tolerant of varying sentence structure and word choice than most. The documentation, also, is excellent by comparison to most competing products, though I wish that someday someone would give us a complete listing of the game's vocabulary. Most companies say that part of the "adventure" of interactive software is finding out what words and phrases will work. In my experience, it is not only *not* fun, but is in fact, a royal pain! My idea of "fun" is playing, not learning to play.

On the whole, *The Serpent's Star* is a lot of fun and should provide many hours of enjoyment to its user. It is a pleasure to see so many companies coming out with such a variety of interactive fiction titles and systems, which let the computer user do things he could not do with just books or TV.

— John D. Gresham

Master Of The Lamps

Published by: Activision
For: Commodore 64

Colors and sound dominate this game as you, a prince (or princess), guide your flying carpet through a multi-colored diamond shaped tunnel to a land of genies. Once you have arrived at the genies' den, you must return three genies to their lamps by responding to colors and tones the genies emit. To make a genie appear, ring a gong three times by pushing the joystick forward. The genie will then emit both an audio and visual series of notes. One at a time the notes will begin moving towards you, whereupon you must quickly jump to the gong whose color matches the note and strike it. A correct response to each series of notes causes a piece of the magic lamp to appear. After all seven pieces have appeared, the genie will be pulled back into the lamp. The game then repeats, with a second genie emitting only colors and a third genie emitting only tones.

My complaint is that if you're struck by a note, the computer sends you back to the beginning of the game. This colorful musical sequence is fun to go through the first few times. However, absolutely no skill is required to navigate the diamond shaped tunnel, and the prince on his carpet will fly straight to the end of the tunnel without the player having to touch the joystick. It would be nice if the game had been designed so that by striking a key, F1 for instance, this phase could be bypassed.

This game is fairly difficult, as you do not have much time to move to the appropriate gong and strike it before the note touches you. It is fun and fast-paced and should provide many hours of entertainment for both youngsters and adults in the house.

— Gordon Bruce

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For IBM PC by Chalkboard. I have the pad, but need starter kit. Contact: Jim, 247 Emerystone Terrace, San Rafael, CA 94903. (415) 479-3902.

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Television repair, video cassette recorder, VCR repair courses, tapes wanted. NRI, CIE, etc. Reasonable. Write: J. Wegner Jr., P.O. Box 262, Glendale, CA 91209.

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Write a best-selling Waite Group computer book. AI on Macintosh, IBM Topview, Graphics and Sound on AMIGA, Macintosh Office, UNIX tricks, etc. Call Mike Van Horn, (415) 332-5555.

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USER GROUP NOTES

While standing in line at that recent fixture of modern life, the automatic teller machine, I ran into **Shep Tamler** of the **East Bay Macintosh User Group**, who updated our recent report by saying that EBMUG has now received its Thunderscanner (which, as you may remember, turns the art of your choice into *MacPaint* images). For further information, contact Shep at (415) 653-5849.

Barbara J. Valley, the secretary and newsletter editor of the **Sanyo User Group of the San Francisco Bay Area**, writes, "We are a new and growing group of owners of Sanyo's 8-bit CP/M machines, namely the MBC 1000, 1100, 1200 series. We number approximately 35 with members in several states. Our group meets the second Friday of each month at the Sears Savings Bank, 1820 S. Grant, San Mateo, from 8:00 until 10:00 (sometimes later)." She doesn't include a phone number, but if you're looking for a Sanyo group in the Peninsula area, write for more information: 1260 Westwood St., Redwood City, CA 94061.

We've been getting quite a bit of correspondence lately from people in search of like-minded souls to form user groups, so without further ado, the MicroTimes Computer Users Connection presents:

Fred L. Russo, who's interested in finding some other **Texas Instruments** folks to form a support group, exchange ideas, swap software, etc. The plan is to hold meetings on the third Tuesday of the month at Fred's place of residence, which is 2021 Ocean Ave. #126 in Santa Monica. Fred suggests, however, that you call first: (213) 392-3217.

And then there's **Shanti Pedersen**, who's looking for others who have occasion to use the **SAMNA Word III** w.p. system. She'd like to form a mutual-support telephone network to discuss the daily joys and sorrows occasioned by the system, and to pool resources and brilliant ideas. Contact her at (415) 982-8898.

Lion Goodman of Mill Valley is greatly enamored of **ENABLE**, an integrated software package which uses the MS-DOS operating system, runs on IBM compatibles, and is highly versatile, with functions including spreadsheets, telecommunications, word processing, file management and more. Not only that, he says, this paragon only requires 192K. Being much enthused with this product, he wants to form a user group of other *ENABLE* fans, and suggests that they contact him either by phone at (415) 383-2337 or by mail at 38 Glen Drive, Mill Valley, CA 94941.

Last but not least, in the blatant nepotism department, there's my beloved sister, **Margaret Beemer** of beautiful Los Angeles, California, who, for the past couple of years, has been slaving away on her doctoral thesis on her **Altos** computer. Upon my inquiring whether she was having any fun at the users' group meetings, she wailed disconsolately, "There isn't one!" And so, all you kind-hearted Altos users out there, drop her a line at the History Department, UCLA, Los Angeles, CA 90024.

In other news, we picked up an excellent newsletter at the MACWORLD Expo in February. It's not local, but it's good and informative: **32 Little Apples**, published monthly by the **Lisa/Mac SIG** of the **Apple Co-op** in Renton, Washington. The January issue features pieces of general interest ranging from expressions of disgruntlement at the high cost of Mac upgrades to product reviews to step-by-step directions (with attendant caveats) on how to do your own upgrades. It's sent to members of the local group A.P.P.L.E. (in addition to the group's other publication, *Call-A.P.P.L.E.*) in return for some pretty hefty dues ($26.00 a year, plus a one-time application fee of $25.00). The club also offers other benefits. **Lisa Storrie-Lombardi**, one of the editors, says the group has many out-of-state members; if you've tried in vain to find other Mac users in your area it might be worth your while to get in touch with these folks: Lisa and Michael Storrie-Lombardi, P.O. Box 536, Edmonds, WA 98020.

And, if you *haven't* given up on connecting with other users of your computer of choice in your area, check out our listings. And if your group isn't listed, or if you're looking for a group, use the form in this issue or any other reasonable communications medium to contact me, Mary Eisenhart, c/o MicroTimes, 5951 Canning Street, Oakland, CA 94609, and I will try diligently to remedy the situation.

USER GROUP LISTINGS

SOUTHERN CALIFORNIA

ASSOCIATIONS

Computer Professionals for Social Responsibility This is a chapter of a nation-wide group dedicated to computer morality. Meetings take place the second Tuesday of every month. Interested persons should call 633-0922 for info.

The North Orange County Computer Club This group is the largest and perhaps the oldest in the county. It is affiliated with a large number of special interest groups and offers something for just about every user. General meetings are usually the first Sunday of every month in the Hashinger Auditorium, Chapman College, Orange. For info, call (714) 998-8080.

The South Orange County Computer Club A general computer club that meets the first Tuesday of every month at 3545 Harbor Blvd., Cost Mesa. Meetings begin at 7:00 P.M.

BULLETIN BOARDS

Gamenet Bulletin Board System. BBS is devoted 100% to gaming subjects. 24 hours, 20 boards, 10 D&D/RPG boards, Alkahest, professional book reviews. Unending Story, Adventurers' Training Ground, Game Hint, etc. Sysop: L.J. Phone: (213) 541-8039.

The Consultant's Exchange BBS Serving professional computer consultants and students since 1983 with the finest public domain software for the IBM-PC. Featuring consultants list and job list. (714) 842-6348 24 hours.

Thousand Oaks Technical (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

Granada Engineering Group RCP/M (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

Aware II (213) 851-0780. Sports BBS with different discussion boards centered around USFL, baseball, etc.

Junkyard Data (213) 867-9541. Multi-interest board in Norwalk with everything from jokes and for sale items to reviews (movies & software), trivia questions, an adults only section, etc.

Marina Matchup (213) 397-6300. This Mar Vista-based dating board operates with Martian software.

Lynzie's Motherboard North Hollywood; multi-interest board with public boards, entertainers exchange, job exchange info. Runs on IBM-PC with 10 mb storage, operates on Martian Software, runs 24 hours a day. (818) 508-6482.

USER GROUPS

ALTOS

Altos User group forming in West LA area. Contact Margaret Beemer, History Department, UCLA, Los Angeles, CA 90024.

APPLE

The Orange Apple Group All Apple owners are invited. Members are knowledgeable on many usages of all types of Apple machines. Meetings are on the first Saturday of every month from 9:00 to 12:00 a.m. For info, call (714) 897-8943.

South Bay Apple III User Group The Apple III is alive and well in Southern California. Come join us on the IIIrd Tuesday of each month. Product demos and discussions and more. Meeting address 1000 Victoria Avenue, Room #SC-E157, Carson, 7:30 pm, IIIrd Tuesday. Contact Gary, P.O. Box 432, Redondo Beach, CA 90277, (213) 316-7738.

Pasadena Apple Users Group (PAUG) Meets at Century Federal Savings, 199 North Lake Avenue, Pasadena, CA (corner of Lake and Walnut). Enter from the parking lot side. Take the elevator to the basement. The bank unlocks the doors at about 7:15 pm and the meeting starts at 7:30.

Wabash Apple Users Group Product demos of software and peripherals, discussions, help from experts. Public domain library. Meets twice a month at the Burbank Public Library, 110 N. Glenoaks Blvd., Burbank. Some months there are *no* meetings, so call Marie Kaden for information: (818) 846-6682.

AT&T

AT&T 6300 West LA: AT&T 6300 or 8086 compatible (desk pro) group forming. Contact Miles Hillis, (213) 472-3522, leave name and interest.

ATARI

The Atari Computer Association of Orange County The group meets on the fourth Sunday of every month at Golden West College, Math building, room 123, in Huntington Beach. Meeting starts at 1:00 pm for beginners and new members. More advanced meetings begin later. For info, call (714) 770-1683.

COMMODORE

Club 64 National user group. Monthly newsletter, BBS, group purchasing, public domain software, much more. Contact: Robert Johnson, (213) 925-4049.

San Diego Commodore Users Group Meets third Tuesday, 7-10 pm, at VFW Bldg., 19th and Broadway, San Diego. Contact Jane Campbell, (619) 277-7214 (between 5 and 9 pm) for more information, or write: P.O. Box 86531, San Diego, CA 92138-6531.

San Fernando Valley Commodore Users Group Meets second Wednesday of the month at Patrick Henry Junior High on Louise Ave. between Devonshire and San Jose in Granada Hills, near 118/405 freeway interchange. Contact Tom Lynch, 21208 Nashville, Chatsworth, CA 91311, (818) 709-4736.

San Luis Obispo Commodore Computer Club 1766 9th St., Los Osos, CA 93402. (805) 528-7475 BBS.

The Commodore Users Group - San Juan Capistrano This group of C64 users meets the second Saturday of every month from 9:00 am till 12:00 at Great American Federal Savings and Loan, 32232 Camino Capo, San Juan Capistrano. For info call 496-5745.

The Commodore Technical Users Group This club is for more advanced C64 users. They meet on the fourth Sunday of every month at Mercury Savings and Loan, 1095 Irvine Blvd., Tustin. Meetings start at 11:00 am.

Hollywood User Group (H.U.G.) for Commodore 64 meets the first Saturday of every month at 6253 Hollywood Blvd., northeast corner of Hollywood/Vine, in the Equitable Building, Room 1219 at 12 noon. Contact: Martin Blackwell, 733 N. Ridgewood Place, L.A., CA 90038/(213) 463-

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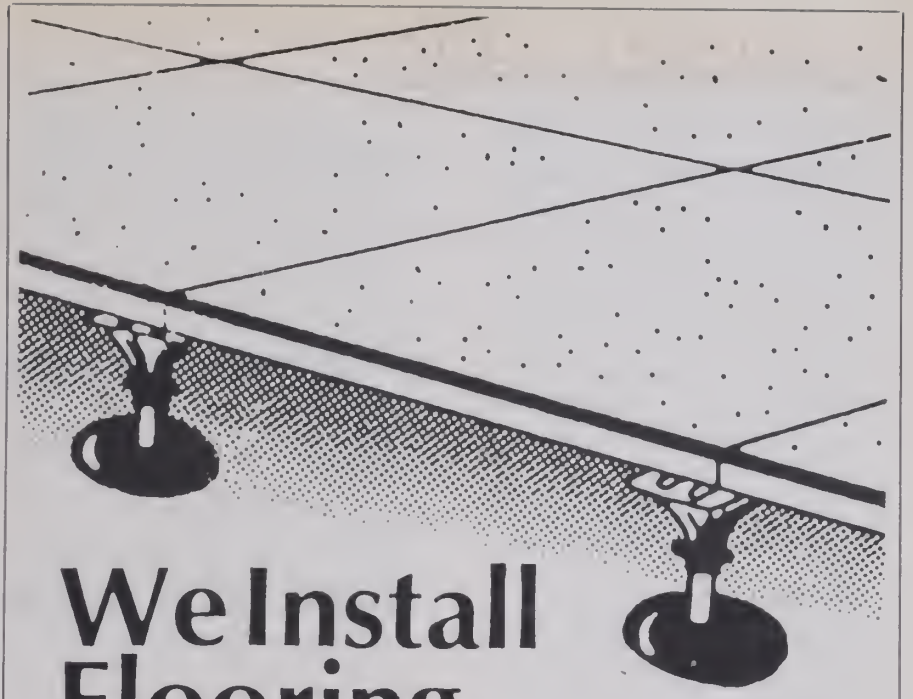

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USER GROUP LISTINGS

MicroTimes is a new, free computer magazine with a current monthly distribution of 100,000 copies in Northern and Southern California. In addition to interviews, features and reviews, we offer a free listing service to user groups, bulletin boards and computer associations. Let us hear from you. Use this coupon for your listing, and feel free to include any additional information for our newsreels column. Please send us your listing by the third week of the month *preceding* the issue in which you want your first listing to run.

User group name _____

Contact name _____

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Mail to: **MicroTimes User Group Listings**
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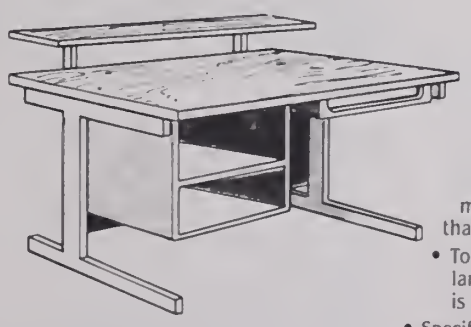

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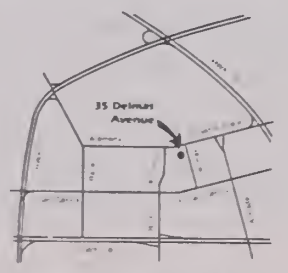

35 Delmas Ave., San Jose CA 95110 **(408) 298-9751**

8973. Beginners welcome!

EPSON

Cursor Club — Epson 402 W. Arrow Highway, Suite 6, San Dimas, CA 91773. (714) 559-8361, Bulletin Board: (714) 592-6316.

Foothill Epson User Group Meets fourth Tuesday of the month at 3132 Foothill Blvd., La Crescenta. All types of micros are welcome. Demonstrations, discussions, newsletters, BBS, etc. For info contact: Jerry Jamriska, 2960 Hawkridge Dr., La Crescenta, CA 91214. (818) 248-7133.

Epson Users Group of Orange County 6075 Jeffrey Mark Street, Cypress, CA 90630, (213) 414-4817.

Epson Users of San Diego P.O. Box 87448, San Diego, CA 92138, (619) 560-7604.

High Desert Epson Users Group 933 Cottonwood Drive, Barstow, CA 92311, (619) 256-3541.

PSC/QX 2934 Wilshire Blvd., Santa Monica, CA 90403, (213) 453-4535, Bulletin Board: (213) 474-4952.

South Bay Epson Users Group 1115 Cerise Avenue, Torrance, CA 90503, (213) 328-9916, Bulletin Board: (213) 618-1940.

FUJITSU

Want User's Group Info Have Fujitsu Micro 16, am looking for a user's group or BBS. Contact Greg Lucido, 5199 E. Pacific Coast Highway, Long Beach, CA 90804.

HEWLETT-PACKARD

Club of Hewlett-Packard Hand-Held Users (CHHU) The true personal computer is small enough to always be conveniently with the user. CHHU, pronounced "chew," is dedicated to the ultimate personal computer. Membership is $30/yr. You will receive 10 issues of the CHHU Chronicle. Meetings are announced in the CHHU Chronicle, or contact Richard J. Nelson. 2545 W. Camden Ave., Santa Ana. CA 92704. (714) 754-7757.

IBM

The North Orange County IBM PC Users Group These people are interested in helping any PC users. They meet the second Tuesday of each month at the Sunny Hills Racquet Club in Fullerton at 7:30.

The Greater South Bay IBM PC Users Association Any L.A. area PC or compatible owners are welcome to attend these meetings at the TRW cafeteria on Compton Blvd. Meeting time is 7:00 pm on the third Tuesday of each month. For info call (213) 325-7533.

The Claremont Computer Club This club is for any interested IBM PC users. Meeting starts at 7:30 on the third Monday at the Galileo Edwards Bldg. on the Harvey Mudd Campus. For info call (714) 626-2286.

LISA

The Lisa Club of Los Angeles This is a brand new club just forming for Lisa owners. Meetings are scheduled to be the first Monday of each month. They have no permanent meeting place as of yet, but for information call (213) 852-4994.

MACINTOSH

Los Angeles Macintosh Group (LAMB) Membership fee is $25/yr or $15/yr for students. Membership includes 12 issues of MACDIGEST newsletter, access to public domain library, BBS, discounts at local stores. Meetings at Madison Elementary School, 11th and Arizona Ave., Santa Monica, 2nd Thursday of the month. Contact J. Baram, (213) 392-5697 for information.

MAC-Hollywood (Hollywood Macintosh SIG) meets once monthly on varying weeknights at 7:30 pm. Contact Ron Bastone, (213) 462-2860. Meetings at 1756 N, Garfield Pl., Hollywood, CA.

Ventura County Macintosh Club Mac and Lisa users invited. Membership $21/yr.; newsletter, software library, discussions and ideas. P.O. Box 7754, Oxnard, CA 93031, (805) 983-1610, (805) 499-2824.

NEC

Orange County NEC Users Group (OCNUG) Dedicated to NEC-APC computers, CP/M-86 & MS-DOS. Always room for any experience level. Meets 3 pm, third Saturday of the month. 6642 Lenore, Garden Grove. CA 92645. Call John Bingel at (714) 897-7656 for more info.

RADIO SHACK/TRS

South Bay Color Computer Club TRS-80, TDP-100, Dragon. Meets third Friday of the month at Mercury Savings, 22939 Hawthorne Blvd., Torrance. Info: Andrew Corlett, 1435 W. 172nd St., Gardena, CA 90247. (213) 538-8394.

The Orange County TRS-80 Group This club is for all TRS users from beginning to expert. Meetings take place the third Sunday of every month at Chapman College, 1:30 pm. For info call 638-7889 after 7:00 pm.

SANYO

Sanyo-MS/DOS Table Top Computers, 14717 South Prairie Ave., Lawndale, CA 90260. (213) 679-1151.

TEXAS INSTRUMENTS

LA 99er Computer Club TI 99/4A support, classes and SIGs, large software library, monthly newsletter. Demonstrations, bulk purchase discounts on hardware, software and books. A good group to join. Meetings at Torrance Public Library, 3031 Torrance Blvd., Torrance, CA. 4th Wednesday of the month, 7 pm. Contact Terrie Masters, 148 S. Maple Drive, Beverly Hills, CA 90212, (213) 271-6930.

The TI-99 Club Yes, there still are a lot of 99's and 99/4a's around. If you own one, then get in touch with these people. They have good info for TI owners. Meetings take place at the Westminster Community Center on the third Thursday of every month at 7:00 pm. For info, call (714) 842-0859.

West Side TI Texas Instruments support group forming, users only, to map, trade, barter and exchange ideas, knowledge, and PD software. Meetings 3rd Tuesday of the month. Contact Fred L. Russo for information: 2021 Ocean Ave. #126, Santa Monica, CA 90405, (213) 392-3217.

NORTHERN CALIFORNIA

ASSOCIATIONS

California Software Electronic Consultants (CAL-SEC) California Software and Electronic Consultants Network. Support Groups — Workshops — Legal Referral — Newsletter. $30 Membership or SASE to CAL-SEC, 3046 College Ave. #4. Berkeley, CA 94705.

Community Entrepreneurs Organization (CEO) Business networking group meets around SF area. Invests in new products, markets, brainstorms. Share info. on tech and non-tech business issues. 4 meeting locations, various week nights. Contact Dr. Crandall, P.O. Box 2781, San Rafael, CA 94912. (415) 435-4461.

Computer Professionals For Social Responsibility P.O. Box 717, Palo Alto, CA 94301. (415) 322-3778.

Computer Professionals For Social Responsibility (EAST BAY) 902 Rose Ave., Piedmont, CA 94611. Contact Bruce Joffe, (415) 768-0288 days, (415) 654-5263 eves.

BULLETIN BOARDS

Kayfog RBBS & RCP/M (Fog System 11) (415) 285-2687; Free; special help for newcomers, Kaypro, Morrow, Osborne, and CP/M.

Napa Valley RBBS/RCP/M (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

Bay Area Atari Users Group 24 hour BBS (408) 578-2390.

NCR BBS of Northern California Bulletin Board System for all users of NCR Microcomputers (Decision Mate V and PC-4). Learn more about NCR's microcomputers.

TI-Comm BBS 8:30 pm to 6:00 am, 7 days a week. 300 baud. Multiple message bases, features, and ELIZA. (408) 926-4413.

The Bay PBBS 300/1200 Baud full duplex. 24 hrs., 20 megs online. Apple super-32 computer section, excellent Macintosh/Apple II downloads. (415) 775-2384. Easiest to get through in the mornings.

TI BBS 300 baud, 24 hours. All systems welcome. Free. 4 message bases, large data base on various subjects. (415) 994-4877.

BAKUP (Bay Area Kayupro Users and Programmers) (415) 223-2237 RBBS & RCP/M — Must be a member of BAKUP, P.O. Box 20181, Oakland, CA 94620.

NCR BBS of Northern California (408) 744-0556. Bulletin board for all users of NCR microcomputers (PC-4 and Decision Mate V). Learn more about NCR's microcomputers. Contact Lee Sherman or Jim Chandler, 756 San Aleso Ave., Sunnyvale, CA. (408) 743-4933.

SiMMS (Silicon Valley Interchange) 4000 files on line. New releases, communications, and utilities for CP/M based computers are available on a nonprofit public-domain, 24 hour remote CP/M system. The SiMMS (Silicon Multiple Message System) Network Headquarters runs on a CompuPro 816 with 40 megabyte hard-disk drive. The Modem number is (408) 732-9190. To register, send a six-digit password and $25 to SiMMS Headquarters, Silicon Valley Interchange RCP/M Registration, Box 532, Cupertino, CA 95015. Sysop: Ed Svoboda Jr.

MBL Referral System BBS A board dedicated to personal messages and advertising listings. Modem: (415) 444-6362; 6 pm - 6 am weekdays, 24 hours weekends. MBLRS BBS users meeting Saturdays, 5:30 pm, 1555 Lakeside Drive, Suite 23, Oakland. Call (415) 444-3033 for info, ask for Mel.

USER GROUPS

APPLE

San Francisco Apple Core Meets every third Saturday of the month at Fort Mason, Bldg. C, Room 100 at 10 am. New products and innovations are featured for Apple II, Apple III, Macintosh and Lisa. Public domain library, SIGs, tech help, newsletter. $20 per year membership. Info: SF Apple Core, 1515 Sloat Blvd., Suite 2, San Francisco, CA 94132. (415) 566-2342 (voice), (415) 474-8608 (BBS/modem).

SPCA (Society For The Prevention of Cruelty To Apples) The Society for the Prevention of Cruelty to Apples is a club for owners of Apple, Apple-compatible (Franklin, etc.) and Macintosh personal computers. It meets at 7:30 pm on the last Wednesday of the month at Thornton Jr. High School, on Thornton Ave. at Dusterberry, in Fremont. Contact SPCA Publicity Chairman Milton Buck, 5246 Channel Drive, Newark, or call (415) 794-2822 for more info.

Association of Apple 32 Users Macintosh, Lisa. An association of 'knowledge workers' who wish to share information on products, applications, and events. User-developed, non-copyrighted software, SIGS, newsletter. P.O. Box 634, Santa Clara, CA 95052.

ASHTON-TATE

Framework/Editor Bay Area Users Group (FREDBUG) Purpose of the group is to share programming and applications techniques under FRAMEWORK for the business and technical professional. Call for info: Rudi Wiedemann, (408) 730-4159.

San Francisco dBase User Group For advanced users and programmers. Meets once per month. Membership required for attendance. Contact Frank A. De Coster, 1100 Gough St., San Francisco, CA 94109, (415) 474-6693.

ATARI

ABACUS (Atari Bay Area Computer Users Society) All ATARI users or prospective users are welcome. Membership ($15/year) provides public domain software, low cost blank disks, monthly newsletter, group prices on hardware and software, help from experts, low cost classes for beginners. Meetings first Saturday of the month, Fort Mason, SF, Room 300, Bldg. C, 10 am-2 pm. Contact Bill Zinn, P.O. Box 1823, Mill Valley, CA 94941. (415) 753-8483.

A.C.M.E. (Atari Computer — Marin Enthusiasts) Meets monthly in Marin, third Thursday evening monthly from 7 pm on. Gallinas School, 177 N. San Pedro Rd., San Rafael. Contact Bruce Frank, (415) 435-6020, P.O. Box 222, Tiburon, CA 94920.

Diablo Valley Atari Computer Enthusiasts (D.A.C.E.) Contact Richard C. Foster, Secretary, 3760 Lindero Drive, Concord, CA 94519.

Bay Area Atari Users Group We have a 24-hour BBS at (408) 578-2390. Meetings at Dysan Auditorium, 4201 Patrick Henry Drive, Santa Clara, CA 95050, first Monday of the month. Contact Frank Nagle, P.O. Box 50459, Palo Alto, CA 94303, (415) 940-1323 for more info.

San Leandro Computer Club Although open to all computer users, this group is primarily oriented to Atari computer owners. Our club is considered one of the best in the country, worthy of consideration by both novices and experts. Meetings 1st Tuesday of the month at San Leandro Community Library, 300 Estudillo Ave., San Leandro, CA. Contact Phil Mitchell, P.O. Box 1525, San Leandro, CA 94577-0152 for more info, or call (415) 351-2208.

ATTACHE

Attache UNL Otrona may be dead, but the Attache Users News Letter Lives ON!! Contact Jim Ayers, 301 Poplar St., Mill Valley, CA 94941. (415) 388-4805. Meetings 7:30 pm, 2nd Wednesday.

BASIS

Bay BUG Basis 108 Users meet every first Friday of the month at College of Alameda Computer Room, 7:30 pm. Contact Roger Bernhardt, 536 Mission, San Francisco or call (415) 221-0262 for more information.

COMMODORE

San Francisco Commodore Users Group Public domain library, classes, tech help, in depth demonstrations, monthly

newsletters, Epromer, savings on purchases, all this and more. BBS # (415) 567-5046 300 baud. Meeting address 256 Laguna Honda Blvd., San Francisco, 3rd Tuesday of the month, 7:30 pm. Contact Roger Tierce, 278 27th Ave. # 102, SF, CA 94121, (415) 387-0225.

20/64 Computer Users Group — San Jose Meets first Sunday of the month at the Theatre Building, San Jose City College, from 6 to 9 pm. (Donations requested to help defray cost of renting meeting space.) Call Herb Miller, (408) 253-2064 for more info, or write P.O. Box 18473, San Jose 95158.

20/64 Computer Users Group — San Jose North Valley Meets second Saturday of the month at the second floor Community Room of Montgomery Ward's, Capitol and McKee Roads, San Jose, from 10 am to noon. (408) 253-2064.

20/64 Club The Cupertino chapter of the 20/64 club for Commodore users meets the second Sunday of each month, Cupertino Public Library, 6 pm. Contact Rex Ackerman, P.O. Box 61063, Sunnyvale, CA 94086. Phone (408) 245-7270.

20/64 Computer Users Group — Campbell Meets the fourth Tuesday of the month at the Campbell Public Library, 70 North Central Avenue, Campbell, from 6:30 to 9:30 pm. (408) 253-2064.

20/64 Computer Users Group — Gilroy Meets the second Wednesday of the month at the Gilroy Public Library, 7397 Rosana Street, Gilroy, from 7 to 9 pm. (408) 253-2064.

Diablo Valley Commodore Users Group Meetings Contra Costa Water District Auditorium, 1331 Concord Ave., Concord, CA, second Thursday of month at 7:30 pm. Write DVCUG, P.O. Box 27155, Concord, CA 94527, or call (415) 838-2838 for more info.

Napa Valley Commodore Computer Club Meets first and third Mondays, 7:30 pm, at Northwood Elementary School, 2214 Berk St., Napa. Take Redwood Road to Dover St. to Berk St. Contact President Dick Bull (707) 257-3773 or vice-president Roger Pruym (707) 253-1690 for more info.

Lake County Commodore Users Group Contact Al Reuss, P.O. Box 388, Clearlake, CA 95422.

Marin Commodore Club Meets at Redwood High School, Corte Madera. Visitors welcome. Contact Elmer Johnson for information: 665 Las Colindas, San Rafael, (415) 479-0426.

PUG of the Silicon Valley Commodore 64 (PETs, 8032s, 2001s also). Friendly computer group established back in 1977 with a very extensive disk library. No dues, donations only. Bring your machines to the meeting or use club dual disk drive to copy programs. Meets at cafeteria, Ford Aerospace Bldg. #3, 3939 Fabian Way, Palo Alto, CA 94303, 1st Wednesdays of the month, 7-10 pm. Contact Marvin Vander Kooi, (408) 446-1936.

PenInsula Commodore User Group Public domain library, demonstrations, user help, newsletter. Membership is $25 per year. Non-members pay $2 at door. Meetings are 3rd Tuesday of each month. Meeting place is the Church of the Good Shepherd Hall, 1300 5th Ave., Belmont (across from city hall). For more info call (415) 595-5452 between 9 am and 6 pm, or call our BBS at the same number after 6 pm.

*CROMEMCO

Silicon Valley Cromemco Users Meets 4th Tuesday of the month at MCM Enterprises. 215 Hamilton Avenue, Palo Alto, CA. Call Ken Brown at (415) 327-8080 for details.

EAGLE

Eagle Computer Users Group (ECUG) Forum for exchange of info and ideas relating to Eagle Computers. Meetings and classes in WP, Data Base, Modems, CP/M, MS/DOS, etc. Meetings at Mercury Savings and Loan, 859 Blossom Hill Road, San Jose, fourth Monday of the month, 7 - 9 pm. Contact David Meisman, P.O. Box 8431, San Jose, CA 95155, (408) 973-1254/973-1460.

Screaming Eagles user group is for Eagle II (8-bit) machines and programs. Public domain disks, newsletter (quarterly, $5), hardware and software discounts, tech help and SIGs. CompuServe PCS-54 anytime; contact Leslie Lieurance, 101m Parnassus #1, San Francisco, CA 94117 (415) 661-4362 (voice).

ENABLE

ENABLE Users Group Now forming. Contact Lion Goodman, 38 Glen Dr., Mill Valley, CA 94941. (415) 383-2337.

EPSON

Bay Area Epson Salts — Epson 125 Del Centro, Millbrae, CA 94030, (415) 697-0567.

Epson Users of San Francisco Bay Area Epson group has nationally circulated newsletter *Valnews*: 400 members — mostly QX-10 owners, growing software library. Meetings focus on mutual support. Mainly Valdocs and other applications. Meetings first Thursdays. 7 p.m. Fort Mason Center, Bldg. C, Room 205, San Francisco. Contact Alan Magary, 904 Irving St., Suite 271, San Francisco CA 94122, (415) 661-9270.

Napa Valley Epson Users Group 1307 Hestia Way, Napa, CA 94558, (707) 253-8727.

IBM

San Francisco PC Users Group Largest SF group focusing on IBM and compatibles. Over 150 disks of public domain software, excellent monthly newsletter. 800 + members, $25/year. Please contact Rick Alber, 3853 18th St., SF 94114. (415) 864-5141.

South County PC Users Group Meetings held second Thursday of each month, at Software Center, 22406 Foothill Blvd., Hayward, CA. Public Domain club disks, newsletter and help on MS-DOS problems. Contact Debra Taylor, P.O. Box 7656, Fremont CA 94537-7656 for more info, or call (415) 276-5111.

KAYPRO

Santa Rosa KUG Owners of Kaypro computers or CP/M systems are invited to join the SRKUG. We conduct seminars and software instruction/training. Come join the fun. Meetings 3rd Thursdays of the month at 7 pm. Call for meeting address: James Daniels, 1029 Damon Court. Santa Rosa, CA 95401. (707) 575-8149.

BAKUP, Bay Area Users and Programmers meets third Tuesday of each month at the Albany Senior Center, 846 Masonic Ave., Albany, CA. We invite owners of Kaypros to meet with us, listen to speakers, share problems and solutions, and check out our public domain library. For more info, send postcard to Bakup, P.O. Box 20181, Oakland, CA 94620.

KAYFUN Peninsula Kaypro Users Group meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., San Carlos. Bimonthly newsletter, public domain software library, and publication library. Membership $12 per year. Every third meeting a Free Forum night dedicated to individual help. Contact Larry Welling, 222 Laurel St. #310, San Carlos, CA 94070, (415) 593-9981.

MACINTOSH

EBMUG (East Bay Macintosh User's Group) Friendly, informal. Public domain software and computer book library. Information exchange. Speakers. Product discounts. Free admission. Meets at El Cerrito Public Library, 6510 Stockton. El Cerrito, CA. third Tuesday of each month at 7:30 pm. Contact Shep Tamler, 5901 Broadway #7, Oakland, CA 94618. (415) 653-5849.

Bay Area MacForum New and experienced Macintosh users. 2 monthly meetings: one immediately following San Francisco Apple Core meeting at Fort Mason, Building C, Room 300, San Francisco, 3rd Saturday of the month; one at Software Center, The Willows Shopping Center in Concord, second Monday of the month, 7 pm - 9 pm. For info: 1515 Sloat Blvd. #2, San Francisco, CA 94132, (415) 566-2342

Berkeley Macintosh Users Group meets every Thursday evening at 5:30 pm on the UC Berkeley campus, in Physical Sciences Lecture Hall (near East Gate). Speakers, discussions, questions and answers. Developer SIG meets every other Wednesday at 5:30 pm on UCB campus in Dwinelle Hall lobby. For more info contact Reese Jones, Director, 1442A Walnut St., Suite #153, Berkeley, CA 94709 or call (415) 849-9114.

MINDSET

First Mindset Users Group The only users group for Mindset computer owners and users. Monthly meetings cover advanced microcomputer graphics and more. Meeting at Graphic Reproduction, 181 Mission Street, SF, March 18. Call David Duberman (415) 668-8352 for more info, or write him at 355 15th Avenue #5, San Francisco.

NORTHSTAR

INSUA Largest North Star users group in the world. Members' newsletter and soft ware library. Membership dues $20. Contact George Riddle, P.O. Box 2910, Fairfield, CA 94533.

OSBORNE

East Bay FOG (First Osborne Group) Osborne, Kaypro and Morrow. Meets second Wednesday of the month at B&B Electric, 2832 Ford Street, Oakland. 6 pm workshops, 7:30 pm program. For info contact A Central Place, 477 15th St., Room 200. Oakland, CA 94612. (415) 834-7897.

SMOG3 Osborne User Group (Peninsula) Meets first and second Monday of every month at Crane Place, 1331 Crane, Menlo Park. Call Phil Moore at (415) 325-2442.

MTDOG (Mt. Diablo Chapter—First Osborne Group) Meetings 7 pm, 3rd Wednesday each month in Diablo Room (top floor), SF Federal Savings and Loan, 1660 Olympic Blvd. (cross-street: California), Walnut Creek. Software library, software/hardware/service demonstrations, sharing problems and solutions. For meeting info contact Sylvia Tobias, (415) 376-4720.

PIED PIPER

Pied Piper Users Group Owners of Pied Piper CP/M based computer are invited to call or attend the PPUG. Meets last Tuesday of the month at 7:30 pm. Please call (415) 638-1146. Meeting address: 10950 Elvessa St., Oakland 94605.

R2E

North Bay R2E Forming user group for R2E System microcomputer users. Please call (415) 235-1598 for information.

RADIO SHACK/TRS

Byte Bandits of America TRS-80's workshop computers club — bimonthly meetings — 2nd Saturday and 4th Wednesday of the month. Bring your computers. Free membership. Modem (408) 374-3974. Meetings at 780 Many Ave., Campbell, CA. For info contact R.W. Brown, (408) 379-2774.

TRS-80 Computer Society of Diablo Valley The purpose of this group is the sharing of information, problem solving, support group, purchasing discounts, support for professional, business and educational users of Radio Shack computers. Out-of-area members welcome. Meetings second Tuesdays of the month, Willow Creek Center, 1026 Mohr Lane, Concord, 7:30-9:30 pm. Doors open at 7. Contact Roy or Sue Copeland, P.O. Box 23438, Pleasant Hill, CA 94523, (415) 372-7003.

SAMNA Word

SAMNA Word III San Francisco or East Bay telephone network forming to discuss glitches, ideas, and interface hassles. Contact Shanti Pederson, (415) 982-8898.

SANYO

Sanyo 1100/1200 User Group of the San Francisco Bay Area. P.O. Box 297, San Mateo, 8-10 pm, every 2nd Friday of month. Send large self-addressed stamped envelope for copy of newsletter.

Sanyo MBC 1100-1150 user group now forming in Oakland. Call or write (415) 534-1981, 5885 Bancroft Ave., Oakland 94605 for meeting time and location.

Sanyo User Group of the San Francisco Bay Area meets 2nd Friday of the month at Sears Savings Bank, 1820 S. Grant, San Mateo, 8 - 10 pm. Devoted to Sanyo 8-bit CP/M machines: MBC 1000, 1100, 1200 series. For info write 1260 Westwood St., Redwood City, CA 94061.

TEXAS INSTRUMENTS

San Francisco 99ers One General Meeting per month plus uncountable mini-meetings for training. Over 500 programs available in library. Meetings second Tuesday of the month, 6:30 pm. Texas Instruments Learning Center, SF. Contact Dick Altman, 1053 Shrader St., San Francisco. (415) 661-1994.

UNIX

The Unix C-Club Seminars, public domain softwares, information exchange, Unix hardwares and softwares. Discount on purchases. Meets 2nd Saturday of each month at 10 am. Call Gilbert B. Dalit at (415) 348-6723 or (408) 238-5587 for more information, or write: 122 2nd Ave., Suite 214, San mateo, CA 94401.

VECTOR

Bay Area Vector Group Meeting held regularly. Please call to be put on mailing list. You will be informed of next meeting! Contact Peter Tjeerdsma, 764 Cole St. #4, San Francisco, CA 94117. Phone (415) 681-0308.

VICTOR

East Bay Victor* Group The East Bay Victor* Group (for users of Victor 9000's and ACT Apricot machines) meets at 7 pm the second Wednesday of every month at Monarch Computers, at 863C San Pablo Ave., Albany, CA. Public domain software usually available.

Ken and Donna Knull of Paradise Business Forms: Photo: Mary Eisenhart

Paradise

Back in 1981, Ken Knull found himself sitting morosely at the kitchen table, facing the prospect of unemployment for the first time in his life. The phone rang, and Paradise was born.

He had been working for Control Data Corporation since 1971, rising from salesman to area sales manager in charge of five western states. In the course of his career at Control Data he had been instrumental in merging the forms division with the computer supplies division; he also had the dubious pleasure of seeing his division sold to a new owner who promptly bankrupted it. Thus he found himself trying to decide what to do next when fate took a hand.

"Just as a fluke," he recalls, "I told the answering service that the company was out of business, but if someone important had to talk to management, here was my phone number. The answering service thought *everyone* was important and put them all through." His former customers, left in the lurch by the company's demise, bombarded Ken with cries for help, and "before the day was over, I had six orders and the business was launched."

Ken then proceeded to serve these clients, plus the ones they referred to him and some others he approached himself, by calling on them in their places of business and writing orders. Then he was besieged by people who wanted to stop by his then-nonexistent office and pick up a single ribbon or box of paper. Rather than turn them away he and his wife Donna opened their retail store in July of 1982, with a beginning inventory of $400 (it's now in the neighborhood of $65,000).

Paradise is a relatively unique establishment in that it sells neither software nor hardware, but rather general supplies for the computer user. "After someone has bought a computer," Ken says, "he becomes our customer." He maintains that he's not there to compete with either computer dealers or stationery stores, but rather to complement the products each offers. "Rather than be all things to all people," he says, "we're very specialized in computer-related consumable supplies," from paper and Rolodex files to cables and disk storage boxes. "I don't think there's a printer I don't have a ribbon for," he laughs, "or a box of paper made that I don't have a couple of cases of."

One of Paradise's specialties that's evolved over the years is custom-designed cables, which can be ordered and delivered in two days. Thanks to knowledgeable and helpful vendors, the store has become quite adept at dealing with cable and interface problems. Yet another strong point is Paradise's comprehensive list of custom computerized business forms, from paychecks to purchase orders to letterheads.

The store's customers range from consultants and dealers, who purchase products for resale to end users, to Fortune 500 companies to home computer owners who may just need a new printer ribbon. All receive personalized, courteous service from the Knulls. Paradise also maintains a considerable mail-order business; turnaround time is very short, since Paradise ships daily via UPS and can rush orders by overnight express is necessary.

Both in-store and mail order prices are attractively low. "People are often surprised that we're competitively priced because we're a small single-item store and we're in Lafayette," Donna observes. Ken adds, "I'd like to think that we've taken all of the catalogs and put them on the shelf, and that we're doing it at mail-order prices."

Indeed, Paradise's success is causing the Knulls to think seriously in terms of expansion, but they're not going to branch out until they find qualified employees familiar with computer *supplies*, rather than computers or stationery. For the time being, they continue to offer quality products and service at the Lafayette store and by mail order.

—Mary Eisenhart

Paradise Business Forms and Computer Supplies, 3705 Mt. Diablo Blvd., Lafayette, CA 94549, (415) 283-6353.

Affordable

When Victor Khodabash bought Affordable Computers in 1982, the Santa Clara-based business was on the verge of bankruptcy. Today, the computer dealership is thriving, and over the past year it has opened stores in Dublin and Santa Cruz. "We're also opening up a place in San Jose later this month," says Khodabash. "It will operate as a warehouse and a training and business center. Basically, it will be our headquarters."

In addition, Khodabash says Affordable Computers is contemplating a store in Santa Rosa and then possibly one in Daly City. He attributes the establishment's turnaround to his expansion policy.

But Tom DePietro, general manager of Affordable Computers, believes Khodabash is being modest. He says, "Victor is the reason we're successful. Anybody who turns a shaky business into a four-chain store has to be on the ball. I admire him because he's competitive and very customer-oriented."

DiPietro adds, "Victor will go after the computers that are hot on the market or are brand new, and he'll try to get them in stock before anybody else. People like a well-stocked store, because then they don't have to search all over town for what they want."

Another of Khodabash's admirable qualities, says DiPietro, is "his concern with hiring knowledgeable salespeople. Our staff's hiring policy is to look for someone who knows computers. We never hire the hardcore salesman, because we use our advertising and in-store promotion to sell the merchandise."

Ironically, Khodabash knew nothing about computers when he took over the business in 1982. His involvement with hardware and software actually came about when he became confined to a wheelchair nine years ago. He explained, "I was working in a nursery at the time and my kidneys failed me. I needed the use of a wheelchair but it was hard to maneuver it in the nursery because of the dirt floor. I realized I needed to work in an office with carpeted floors to enable me to get around."

Because of the demand for computers, Khodabash realized that selling computers could be a lucrative business venture. He said, "I put down $40,000 to buy Affordable Computers. At least that was the price on paper. However, due to the previous owner's financial troubles, Affordable Computers wound up costing a not-so-affordable $130,000. I was able to pay it all off through internal assets. The creditors gave us an extension and by March of '83, the business was paid in full."

Currently, Khodabash puts in about a 64 hour work week. He emphasizes that 15 of those hours are spent while he is hooked up to a kidney machine. He urges all handicapped people to keep working even if it's at home. "The worst thing for a person who is confined to a kidney machine is for them to stay in the hospital," he says. "They could be out accomplishing something and besides, it costs the taxpayers money."

Money is something that Khodabash hasn't had to worry about lately. He just bought a one-hour advertising block on Channel 48 in San Jose, Thursday nights from 6:30 - 7:30. Each hour will contain 10 to 12 segments showing the latest developments with Affordable Computers.

Khodabash also said that a catalogue designed for businesses only will be available at the end of the month and will feature the latest line of hardware and software available at Affordable Computers. The catalogue will be delivered to businesses within 24 hours, upon request.

Khodabash adds, "However, we sell computers for both business and home use and we stock an extensive supply of Apples, ITTs, and NCRs. We also carry most of the other brand names."

—Tim Tyler

Affordable Computers, 3331 El Camino Real, Santa Clara, CA 95051, (408) 249-4221

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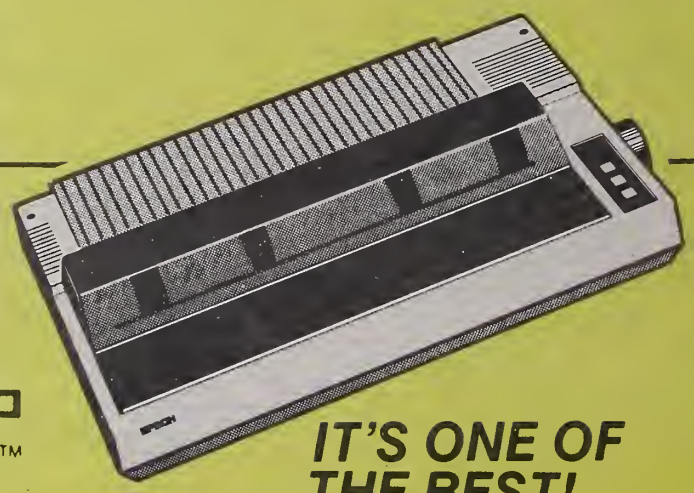

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